

Recent publications by IBM authors

The information listed here is supplied by the Institute for Scientific Information and other outside sources. Reprints of the papers may be obtained by writing directly to the first author cited.

- Journals are listed alphabetically by title; papers are listed sequentially for each journal.

A

Communication Types, C. C.-D. Jung, E. Sibert (IBM Corporation, Neighborhood Road, Kingston, NY 12401), and E. Silbert (Syracuse University, Syracuse, NY), *ACM Sigplan Notices* **25**, No. 9, 25–30 (1990).

Contracts: Specifying Behavioral Compositions in Object-Oriented Systems, R. Helm (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), I. M. Holland (Northeastern University, Boston, MA), and D. Gangopadhyay (IBM, Yorktown Heights, NY), *ACM Sigplan Notices* **25**, No. 10, 169–180 (1990).

MODE: A UIMS for Smalltalk, Y.-P. Shan (IBM Corporation, P.O. Box 60000, Cary, NC 27512), *ACM Sigplan Notices* **25**, No. 10, 258–268 (1990).

Operational Characteristics of a Marmen Device, B. Cunningham (IBM Corporation, Route 52, Hopewell Junction, NY 12533) and K. H. G. Ashbee (University of Tennessee, Knoxville, TN), *Acta Metallurgica et Materialia* **38**, No. 11, 2353–2355 (1990).

AC Electroluminescent Display Technology: Challenges and Potential, P. Pleshko (IBM Corporation, 2000 Purchase Street, Purchase, NY 10577), *Acta Polytechnica Scandinavica, Applied Physics*, No. 170, 115–122 (1990).

Stochastic Concavity of Throughput in Series of Queues with Finite Buffers, V. Anantharam (Cornell University, Ithaca, NY 14853) and P. Tsoucas (IBM, Yorktown Heights, NY), *Advances in Applied Probability* **22**, No. 3, 761–763 (1990).

Comment on Nonlinear Viscous Flow in a Glass Forming, T. Takamori (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598) and M. Tomozawa (Rensselaer Polytechnic Institute, Troy, NY), *American Ceramic Society Bulletin* **69**, No. 9, 1506–1507 (1990).

Determination of Molecular Weight and Composition of a Perfluorinated Polymer from Fragment Intensities in Time-of-Flight Secondary Ion Mass Spectrometry, D. E. Fowler, R. D. Johnson (IBM Corporation, 650 Harry Road, San Jose, CA 95120), D. van Leyen, and A. Benninghoven (Universität Münster, Münster, Federal Republic of Germany), *Analytical Chemistry* **62**, No. 19, 2088–2092 (1990).

Spatially Resolved Laser Transfer of Organic Surface Films for Infrared Analysis, M. S. de Vries, H. E. Hunziker, H. R. Wendt (IBM Corporation, 650 Harry Road, San Jose, CA 95120), and D. D. Saperstein (IBM, San Jose, CA), *Analytical Chemistry* **62**, No. 21, 2385–2387 (1990).

Temporally Periodic States of Extended Nonequilibrium Systems, G. Grinstein (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Annals of the New York Academy of Sciences* **581**, 128–135 (1990).

The Quantum Hall Effect in Open Conductors, M. Buttiker (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Annals of the New York Academy of Sciences* **581**, 176–184 (1990).

Theory of Superconductor Insulator Transitions in Disordered Films, M. P. A. Fisher (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Annals of the New York Academy of Sciences* **581**, 223–231 (1990).

Frequency Dependence of Resonant Tunneling, C. Jacoboni (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598) and P. J. Price (University of Modena, Modena, Italy), *Annals of the New York Academy of Sciences* **581**, 253–258 (1990).

Grand Design, Multiple Arm, and Flocculant Spiral Galaxies, B. G. Elmegreen (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Annals of the New York Academy of Sciences* **596**, 40–52 (1990).

Profilometry with a Coherence Scanning Microscope, B. S. Lee and T. C. Strand (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Applied Optics* **29**, No. 26, 3784–3788 (1990).

Threshold Reduction Through Photon Recycling in Semiconductor Lasers, Y. B. Gigase, C. S. Harder, M. P. Kesler, H. P. Meier, and B. Van Zeghbroeck (IBM Corporation, Säumerstrasse 4, 8803 Rüschlikon, Switzerland), *Applied Physics Letters* **57**, No. 3, 1310–1312 (1990).

Arsenic Precipitates and the Semi-Insulating Properties of GaAs Buffer Layers Grown by Low Temperature Molecular Beam Epitaxy, A. C. Warren, J. M. Woodall, J. L. Freeouf, D. Grischkowsky, D. T. McInturf (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), M. R. Melloch, and N. Otsuka (Purdue University, West Lafayette, IN), *Applied Physics Letters* **57**, No. 3, 1331–1333 (1990).

Low-Temperature Silicon Cleaning Via Hydrogen Passivation and Conditions for Epitaxy, S. S. Iyer, M. Arienzo, and E. de Frésart (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Applied Physics Letters* **57**, No. 9, 893–895 (1990).

Temperature Dependence of Microwave Losses in Y-Ba-Cu-O Films, E. J. Pakulis, R. L. Sandstrom, P. Chaudhari, and R. B. Laibowitz (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Applied Physics Letters* **57**, No. 9, 940–942 (1990).

GaAs Multiple Quantum Well Waveguide Modulators on Silicon Substrates, G. V. Treyz, P. G. May, D. LaTulipe, S. Basu (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), and W. I. Wang (Columbia University, New York, NY), *Applied Physics Letters* **57**, No. 11, 1078–1080 (1990).

Analysis of Buried GaAs Layers in (100) Silicon by Electron Energy Loss Spectroscopy, Rutherford Backscattering Spectroscopy, and Ion Channeling, P. Madakson and J. Bruley (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Applied Physics Letters* **57**, No. 11, 1126–1128 (1990).

Annealing Behavior of GaAs Implanted with Si⁺ and SiF⁺ and Rapid Thermally Annealed with Plasma-Enhanced Chemical Vapor Deposited Silicon Nitride Cap, J. P. DeSouza, D. K. Sadana, H. Baratte, and F. Cardone (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Applied Physics Letters* **57**, No. 11, 1129–1131 (1990).

Bias Stress-Induced Instabilities in Amorphous Silicon Nitride/Hydrogenated Amorphous Silicon Structures: Is the "Carrier-Induced Defect Creation" Model Correct?, A. V. Gelatos and J. Kanicki (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Applied Physics Letters* **57**, No. 12, 1197–1199 (1990).

Ultrathin Oxide-Nitride-Oxide Films, Z. A. Weinberg, K. J. Stein, T. N. Nguyen, and J. Y. Sun (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Applied Physics Letters* **57**, No. 12, 1248–1250 (1990).

Ultraclean, Integrated Processing of Thermal Oxide Structures, M. Offenberger, M. Liehr, G. W. Rubloff, and K. Holloway (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Applied Physics Letters* **57**, No. 12, 1254–1256 (1990).

Self-Propagating Explosive Reaction in Al/Ni Multilayer Thin Films, E. Ma, C. V. Thompson (Massachusetts Institute of Technology, Cambridge, MA 02139), L. A. Clevenger, and K. N. Tu (IBM, Yorktown Heights, NY), *Applied Physics Letters* **57**, No. 12, 1262–1264 (1990).

Photodarkening and Bleaching in Amorphous Silicon Nitride, C. H. Seager (Sandia National Laboratories, Albuquerque, NM 87185) and J. Kanicki (IBM, Yorktown Heights, NY), *Applied Physics Letters* **57**, No. 14, 1378–1380 (1990).

Giant Microwave Losses in a YBaCuO Bicrystal, E. J. Pakulis and S. E. Blum (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Applied Physics Letters* **57**, No. 14, 1464–1466 (1990).

Formation of Arsenic Precipitates in GaAs Buffer Layers Grown by Molecular Beam Epitaxy at Low Substrate Temperatures, M. R. Melloch, N. Otsuka (Purdue University, West Lafayette, IN 47907), J. M. Woodall, A. C. Warren, and J. L. Freeouf (IBM, Yorktown Heights, NY), *Applied Physics Letters* **57**, No. 15, 1531–1533 (1990).

Improved Contacts to Semi-Insulating GaAs Photoconductive Switches Using a Graded Layer of InGaAs, D. Kuchta, J. R. Whinnery, J. S. Smith (University of California, Berkeley, CA 94720), J. M. Woodall, and D. Pettit (IBM, Yorktown Heights, NY), *Applied Physics Letters* **57**, No. 15, 1534–1536 (1990).

Electronic Structure and Dynamics of Thin Ge/GaAs (110) Heterostructures, R. Haight and J. A. Silberman (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Applied Physics Letters* **57**, No. 15, 1548–1550 (1990).

Effect of High Unintentional Doping in AlGaAs Barriers on Scattering Times in Accumulation Layers, B. Laikhtman, M. Heiblum (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), and U. Meirav (Massachusetts Institute of Technology, Cambridge, MA), *Applied Physics Letters* **57**, No. 15, 1557–1559 (1990).

Radiative Recombination in Surface-Free n⁺/n⁻/n⁺ GaAs Homostructures, L. M. Smith, D. J. Wolford (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), R. Venkatasubramanian, and S. K. Ghandhi (Rensselaer Polytechnic Institute, Troy, NY), *Applied Physics Letters* **57**, No. 15, 1572–1574 (1990).

Photoemission from Thin-Film Lanthanum Hexaboride, P. G. May, R. R. Petkie, J. M. E. Harper, and D. S. Yee (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Applied Physics Letters* **57**, No. 15, 1584–1585 (1990).

N⁺ Doping of Gallium Arsenide by Rapid Thermal Oxidation of a Silicon Cap, D. K. Sadana, J. P. de Souza, and F. Cardone (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Applied Physics Letters* **57**, No. 16, 1681–1683 (1990).

Blue and Green CW Upconversion Lasting in Er-YLiF₄, T. Hebert (Fritz-Haber Institut, Berlin, Federal Republic of Germany), R. Wannemacher, W. Lenth, and R. M. MacFarlane (IBM, San Jose, CA), *Applied Physics Letters* **57**, No. 17, 1727-1729 (1990).

Tantalum as a Diffusion Barrier Between Copper and Silicon, K. Holloway and P. M. Fryer (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Applied Physics Letters* **57**, No. 17, 1736-1738 (1990).

Observation of Miniband Formation in the CdTe/Cd_{1-x}Mn_xTe Quantum Well System, A. Hartwit (Lockheed Palo Alto Research Laboratories, 3251 Hanover Street, Palo Alto, CA 94304), C. Hsu, F. Agullo-Rúeda, and L. L. Chang (IBM, Yorktown Heights, NY), *Applied Physics Letters* **57**, No. 17, 1769-1771 (1990).

Crossover from Tunneling to Metallic Behavior in Superconductor Semiconductor Contacts, A. W. Kleinsasser, T. N. Jackson, D. McInturf, F. Rammo, G. D. Pettit, and J. M. Woodall (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Applied Physics Letters* **57**, No. 17, 1811-1813 (1990).

Batch Fabricated Sensors for Magnetic Force Microscopy, P. Grutter, D. Rugar, H. J. Mamin, G. Castillo, S. E. Lambert, C. J. Lin, R. M. Valletta (IBM Corporation, 650 Harry Road, San Jose, CA 95120), O. Wolter, T. Bayer, and J. Greschner (IBM Germany, Sindelfingen, Federal Republic of Germany), *Applied Physics Letters* **57**, No. 17, 1820-1822 (1990).

Particle Trapping Phenomena in Radio Frequency Plasmas, G. S. Selwyn, J. E. Heidenreich, and K. L. Haller (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Applied Physics Letters* **57**, No. 18, 1876-1878 (1990).

Accumulation Capacitance for GaAs-SiO₂ Interfaces with Si Interlayers, J. L. Freeouf, D. A. Buchanan, S. L. Wright, T. N. Jackson, and B. Robinson (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Applied Physics Letters* **57**, No. 18, 1919-1921 (1990).

Microwave Diffraction and Interference in Reflection Using Transient Radiation from Optoelectronically Pulsed Antennas, W. M. Robertson, G. Arjavalingham, and G. V. Kopcsay (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Applied Physics Letters* **57**, No. 19, 1958-1960 (1990).

Photobleaching of Light-Induced Paramagnetic Defects in Amorphous Silicon Nitride Films, M. S. Crowder, E. D. Tober (IBM Corporation, 5600 Cottle Road, San Jose, CA 95193), and J. Kanicki (IBM, Yorktown Heights, NY), *Applied Physics Letters* **57**, No. 19, 1995-1997 (1990).

Ultrafast Time Resolution in Scanned Probe Microscopies, R. J. Hamers (University of Wisconsin, Madison, WI 53706) and D. G. Cahill (IBM, Yorktown Heights, NY), *Applied Physics Letters* **57**, No. 19, 2031-2033 (1990).

Simultaneous Measurement of Lateral and Normal Forces with an Optical-Beam-Deflection Atomic Force Microscope, G. Meyer and N. M. Amer (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Applied Physics Letters* **57**, No. 20, 2089-2091 (1990).

Vapor Phase Hydrocarbon Removal for Si Processing, S. R. Kasi and M. Liehr (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Applied Physics Letters* **57**, No. 20, 2095-2097 (1990).

Direct Deposition of Magnetic Dots Using a Scanning Tunneling Microscope, M. A. McCord and D. D. Awschalom (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Applied Physics Letters* **57**, No. 20, 2153-2155 (1990).

Defect Formation Caused by a Transient Decrease in the Ambient Oxygen Concentration During Growth of YBa₂Cu₃O_{7-δ} Films, A. Gupta, B. W. Hussey, A. Kussmaul, and A. Segmüller (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Applied Physics Letters* **57**, No. 22, 2365-2367 (1990).

IR Microscopy Applied to Slider Rail Depletion of Lube on a Thin-Film Magnetic Recording Disk, C. J. Mastrangelo, L. Von Schell, and Y. Le (IBM Corporation, 5600 Cottle Road, San Jose, CA 95193), *Applied Spectroscopy* **44**, No. 8, 1415-1416 (1990).

Qualitative Physics Using Dimensional Analysis, R. Bhaskar and A. Nigam (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Artificial Intelligence* **45**, Nos. 1-2, 73-111 (1990).

A Wavelike Origin for Clumpy Structure and Broad Line Wings in Molecular Clouds, B. G. Elmegreen (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Astrophysical Journal* **361**, No. 2, Part 2, L77-L80 (1990).

Calculation of Visual Range Improvements from SO₂ Emission Controls: I. Semiempirical Methodology, P. Zannetti (IBM Norway, Thormøhlensgate 55, N-5008 Bergen, Norway), I. Tombach (Aero Vironment, Inc. Monrovia, CA), and W. Balson (Decis Focus, Inc., Los Altos, CA), *Atmospheric Environment* **24**, No. 9, 2361-2368 (1990).

Imaging Semiconductors, Metals and Molecules with Scanning Tunneling Microscopy, R. J. Wilson, S. Chiang, and D. D. Chambliss (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Australian Journal of Physics* **43**, Nos. 4&5, 393-400 (1990).

B

Godel Redux, A. Manasteramer, W. Zadrozny (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), and W. J. Savitch (University of California at San Diego, La Jolla, CA), *Behavioral and Brain Sciences* **13**, No. 4, 675 (1990).

The World Turned Upside Down: IBM in the 1990s, E. F. Bryan (IBM Corporation, Stamford, CT), *Business Horizons* **33**, No. 6, 39-47 (1990).

C

Understand the Basics of Statistical Process Control, H. Levinson (IBM Corporation, Route 52, Hopewell Junction, NY 12533), *Chemical Engineering Progress* **86**, No. 11, 28-37 (1990).

Frequency-Dependent Hyperpolarizabilities of Haloforms from Ab Initio SCF Calculations, S. P. Karna and M. Dupuis (IBM Corporation, Neighborhood Road, Kingston, NY 12401), *Chemical Physics Letters* **171**, No. 3, 201–208 (1990).

Nonlinear Optical Properties of Organic Solids: Ab Initio Polarizability and Hyperpolarizabilities of Nitroaniline Derivatives, C. Daniel and M. Dupuis (IBM Corporation, Neighborhood Road, Kingston, NY 12401), *Chemical Physics Letters* **171**, No. 3, 209–216 (1990).

Low-Temperature Structures of C₄ and C₁₀ from the Car-Parrinello Method: Single States, W. Andreoni, D. Scharf (IBM Corporation, Säumerstrasse 4, 8803 Rüschlikon, Switzerland), and P. Giannozzi (Institut Romand de Recherche Numérique en Physique de Matériaux, Lausanne, Switzerland), *Chemical Physics Letters* **173**, No. 5–6, 449–455 (1990).

Spectroscopy of the CH₃Zn Radical Vibrational Frequencies and Electronic Configurations of the X, A, and C States, R. L. Jackson (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Chemical Physics Letters* **174**, No. 1, 53–60 (1990).

The Vibrational Overtone Spectrum of a Thin Polymer Film, A. Skumanich and C. R. Moylan (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Chemical Physics Letters* **174**, No. 2, 139–144 (1990).

Low-Temperature Chemical Vapor Deposition of High-Purity Copper from an Organometallic Source, D. B. Beach, F. K. LeGoues, and C.-K. Hu (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Chemistry of Materials* **2**, No. 3, 216–219 (1990).

In Situ Determination of the Effects of CO₂ and Other Volatile Impurities of YBa₂Cu₃O_{7-x}, C. M. Greenlief, J. F. Bringley, B. A. Scott, S. M. Gates, S. S. Trail, and C. D'Emic (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Chemistry of Materials* **2**, No. 4, 416–420 (1990).

Characterization of a Novolac-Based Three-Component Deep-UV Resist, D. R. McKean, S. A. MacDonald, R. D. Johnson, N. J. Clecak, and C. G. Willson (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Chemistry of Materials* **2**, No. 5, 619–624 (1990).

Methods for Characterizing Polymer Surfaces and Interfaces, T. P. Russell (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Chimia* **44**, No. 10, 312–315 (1990).

Discrete Event Simulation, P. Heidelberger (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Communications of the ACM* **33**, No. 10, 28–29 (1990).

NEST: A Network Simulation and Prototyping Testbed, A. Dupuy (Columbia University, New York, NY 10027), J. Schwartz (Sigma Imaging Systems, New York, NY), Y. Yemini (Columbia University, New York, NY), and D. Bacon (IBM, Yorktown Heights, NY), *Communications of the ACM* **33**, No. 10, 63–74 (1990).

Simulation of a Semiconductor Manufacturing Line, D. J. Miller (IBM Corporation, P.O. Box A, Essex Junction, VT 05452), *Communications of the ACM* **33**, No. 10, 98–108 (1990).

Complex Objects for Relational Databases, T. Barsalou (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598) and G. Wiederhold (Stanford University, Stanford, CA), *Computer Aided Design* **22**, No. 8, 458–468 (1990).

Integrated Approach to Buffer Management Query Optimization, D. W. Cornell and P. S. Yu (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Computer Systems Science and Engineering* **5**, No. 4, 243–251 (1990).

Issues on Feature-Based Editing and Interrogation of Solid Models, J. R. Rossignac (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Computers & Graphics* **14**, No. 2, 149–172 (1990).

B3-Splines for Interactive Curve and Surface Fitting, K.-C. Chu (IBM Corporation, 2800 Sand Hill Road, Menlo Park, CA 94025), *Computers & Graphics* **14**, No. 2, 281–288 (1990).

Visualizing Cantor Cheese Construction, C. A. Pickover (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598) and K. McCarty (ROLM Systems, Santa Clara, CA), *Computers & Graphics* **14**, No. 2, 337–341 (1990).

An Expert Decision-Support System for Option-Based Investment Strategies, T. Huynh and C. Lassez (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Computers & Mathematics with Applications* **20**, No. 9/10, 1–14 (1990).

Computational Aspects of a Branch and Bound Algorithm for Quadratic Zero-One Programming, P. M. Pardalos (Pennsylvania State University, University Park, PA 16802) and G. P. Rodgers (IBM, Essex Junction, VT), *Computing* **45**, No. 2, 131–144 (1990).

The Growth of 2-D Pits in Thin Film Aluminum, G. S. Frankel (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Corrosion Science* **30**, No. 12, 1203–1218 (1990).

D

Succinct Representation of General Unlabeled Graphs, M. Naor (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Discrete Applied Mathematics* **28**, No. 3, 303–307 (1990).

E

Automorphisms of One-Sided Subshifts of Finite Type, M. Boyle (University of Maryland, College Park, MD 20742), J. Franks (Northwestern University, Evanston, IL), and B. Kitchens (IBM, Yorktown Heights, NY), *Ergodic Theory and Dynamical Systems* **10**, No. SEP, 421–449 (1990).

Non-Fermi-Liquid Exponents of the One-Dimensional Hubbard Model, S. Sorella, A. Parola (International School for Advanced Studies, Strada Costiera 11, Trieste, Italy), M. Parrinello (IBM, Rüschlikon, Switzerland), and E. Tosatti (International School for Advanced Studies, Trieste, Italy), *Euromphys Letters* **12**, No. 8, 721–726 (1990).

On the Hydrodynamic Behavior of the Lattice Boltzmann Equation, M. Vergassola (Università La Sapienza, P. le A. Moro 2, I-00185 Rome, Italy), R. Benzi (Università Tor Vergata, Rome, Italy), and S. Succi (IBM European Center for Scientific and Engineering Computing, Rome, Italy), *Europhysics Letters* 13, No. 5, 411-416 (1990).

F

Index of Refraction of Doped BaTiO₃ Crystals, G. Burns, F. H. Dacol, and J. Albers (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Ferroelectrics* 108, 153-157 (1990).

Raman Measurements of the Ferroelectric Ba_{0.4}Sr_{0.6}Nb₂O₆, G. Burns, F. H. Dacol (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), R. R. Neurgaonkar (Rockwell International Corporation, Thousand Oaks, CA), A. S. Bhalla, and R. Guo (Pennsylvania State University, University Park, PA), *Ferroelectrics* 108, 189-193 (1990).

Deep Donor Levels (DX Centers) in III-V Semiconductors: Recent Experimental Results, P. M. Mooney (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Festkörperprobleme, Advances in Solid State Physics* 29, 215-230 (1990).

Photothermal Spectroscopy and Its Analytical Application, H. Coufal (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Fresenius Journal of Analytical Chemistry* 337, No. 7, 835-842 (1990).

H

Measurement of the Local Electron Spin Polarization by the Scanning Tunneling Microscope, R. Wiesendanger, H. J. Guntherodt (University of Basel, Klingelberstrasse 82, CH-4056 Basel, Switzerland), G. Guntherodt (Institute of Physics RWTH, Aachen, Federal Republic of Germany), R. J. Gambino, and R. Ruf (IBM, Yorktown Heights, NY), *Helvetica Physica Acta* 63, No. 6, 778-782 (1990).

STM and Luminescence, D. L. Abraham, S. F. Alvarado, C. Schönenberger, D. J. Arent, and H. P. Meier (IBM Corporation, Säumerstrasse 4, 8803 Rüschlikon, Switzerland), *Helvetica Physica Acta* 63, No. 6, 783-786 (1990).

Thermal Desorption Kinetics of Water from Glass Powders Studied by Knudsen Effusion Mass Spectroscopy, M. A. Frisch and E. A. Giess (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *High Temperature Science* 26, 175-185 (1990).

Comparison of Thermodynamic Data Obtained by Knudsen Vaporization Magnetic and Quadrupole Mass Spectrometric Techniques, G. A. Murray, R. J. Kematich, C. E. Myers (State University of New York, Binghamton, NY 13901) and M. A. Frisch (IBM, Yorktown Heights, NY), *High Temperature Science* 26, 415-425 (1990).

I

Fractal Large Scale Structures and Crossover to Homogeneity: The Mass Radius Function Versus the Correlations, and the Measurement of the Correlation Range, B. B. Mandelbrot (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *IAU Symposia*, No. 130, 482-484 (1988).

Harmonic Distortion of the Four Terminal MOSFET in Non-Quasi-Static Operation, L. J. Pu and Y. P. Tsividis (IBM Corporation, Route 52, Hopewell Junction, NY 12533), *IEEE Proceedings G* 137, No. 5, 325-332 (1990).

Excimer-Laser Ablation and Etching, J. H. Brannon (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *IEEE Circuits and Devices Magazine* 6, No. 5, 18-24 (1990).

From Behavior to Structure: High-Level Synthesis, R. Camposano (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *IEEE Design & Test of Computers* 7, No. 5, 8-19 (1990).

The Olympus Synthesis System, G. Demicheli, D. Ku, F. Mailhot (Stanford University, Stanford, CA 94305), and T. Truong (IBM, San Jose, CA), *IEEE Design & Test of Computers* 7, No. 5, 37-53 (1990).

Velocity Saturation in the Collector of Si/Ge_{0.4}Si_{0.6}/Si HBT's, P. E. Cottrell (IBM Corporation, P.O. Box A, Essex Junction, VT 05452) and Z. P. Yu (Stanford University, Stanford, CA 94305), *IEEE Electron Device Letters* 11, No. 10, 431-433 (1990).

Novel Properties of a 0.1-μm-Long Split-Gate MODFET, K. Ismail, K. Y. Lee, D. P. Kern, and J. M. Hong (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *IEEE Electron Device Letters* 11, No. 10, 469-471 (1990).

50-GHz Self-Aligned Silicon Bipolar Transistors with Ion-Implanted Base Profiles, J. Warnock, J. D. Cressler, K. A. Jenkins, T.-C. Chen, J. Y.-C. Sun, and D. D. Tang (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *IEEE Electron Device Letters* 11, No. 10, 475-477 (1990).

Selectively Regrown Contacts to Field-Effect Transistors with Two-Dimensional Electron-Gas Channels, A. Palevski (AT&T Bell Laboratories, Murray Hill, NJ 07974), P. M. Solomon, T. F. Kuech, M. Tischler, and C. Umbach (IBM, Yorktown Heights, NY), *IEEE Electron Device Letters* 11, No. 11, 535-537 (1990).

A 50-ns 16-Mb DRAM with a 10-ns Data Rate and On-Chip ECC, H. L. Kalter, C. H. Stapper, J. E. Barth, Jr., J. DiLorenzo, C. E. Drake, J. A. Fifield, G. A. Kelley, Jr., S. C. Lewis, W. B. Van Der Hoeven, and J. A. Yankosky (IBM Corporation, P.O. Box A, Essex Junction, VT 05452), *IEEE Journal of Solid-State Circuits* 25, No. 5, 1118-1128 (1990).

A CMOS Mainframe Processor with 0.5-μm Channel Length, H. Schettler, W. Haug, K. J. Getzlaff, C. W. Starke (IBM Germany, D-7030 Böblingen, Federal Republic of Germany), and A. Bhattacharyya (IBM, Essex Junction, VT), *IEEE Journal of Solid-State Circuits* 25, No. 5, 1166-1177 (1990).

Second-Generation RISC Floating Point with Multiply-Add Fused, E. Hokenek, R. K. Montoye, and P. W. Cook (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *IEEE Journal of Solid-State Circuits* 25, No. 5, 1207-1213 (1990).

Level-Shifted 0.5- μ m BICMOS Circuits, C.-L. Chen (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *IEEE Journal of Solid-State Circuits* **25**, No. 5, 1214-1216 (1990).

Waiting Time Analysis in a Single Buffer DQBD (802.6) Network, C. C. Bisdikian (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *IEEE Journal on Selected Areas in Communications* **8**, No. 8, 1565-1573 (1990).

Spread-Spectrum Technique in Optical Communication Using Transform Domain Processing, C. M. DeCusatis (IBM Corporation, Neighborhood Road, Kingston, NY 12401) and P. K. Das (Rensselaer Polytechnic Institute, Troy, NY), *IEEE Journal on Selected Areas in Communications* **8**, No. 8, 1608-1616 (1990).

Text-to-Speech Conversion on a Personal Computer, Y. A. El-Imam and K. Banat (IBM Corporation, P.O. Box 4175, 13042 Safat, Kuwait) and K. Banat (Kuwait University, Kuwait), *IEEE Micro* **10**, No. 4, 62-74 (1990).

Ridge Formation for AlGaAs Grinsch Lasers by Cl₂ Reactive Ion Etching, M. Jost, G. L. Bona, P. Buchmann, G. Sasso, P. Vettiger, and D. Webb (IBM Corporation, Säumerstrasse 4, 8803 Rüschlikon, Switzerland), *IEEE Photonics Technology Letters* **2**, No. 10, 697-698 (1990).

Optimum Time Delay: Detection and Tracking, R. E. Bethel (IBM Corporation, 9500 Godwin Drive, Manassas, VA 22110) and R. G. Rahikka (U.S. Navy, White Oaks Laboratory, Silver Spring, MD), *IEEE Transactions on Aerospace and Electronic Systems* **26**, No. 5, 700-712 (1990).

Radiation and Scattering from Structures Involving Finite-Size Dielectric Regions, B. J. Rubin and S. Daijavad (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *IEEE Transactions on Antennas and Propagation* **38**, No. 11, 1863-1873 (1990).

Undecidability Results for Deterministic Communicating Sequential Processes, R. A. Cieslak (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598) and P. P. Varaiya (University of California, Berkeley, CA), *IEEE Transactions on Automatic Control* **35**, No. 9, 1032-1039 (1990).

Waveform Relaxation Analysis of RLCG Transmission Lines, F.-Y. Chang (IBM Corporation, Route 52, Hopewell Junction, NY 12533), *IEEE Transactions on Circuits and Systems* **37**, No. 11, 1394-1415 (1990).

Comments on "Exact Results for Nonsymmetric Token Ring Systems", G. L. Choudhury (AT&T Bell Laboratories, Holmdel, NJ 07733) and H. Takagi (IBM Japan, Tokyo, Japan), *IEEE Transactions on Communications* **38**, No. 8, 1125-1127 (1990).

Sequence Estimation for Class-IV Partial-Response Channels with Jitter, E. Feig (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *IEEE Transactions on Communications* **38**, No. 8, 1181-1189 (1990).

Selective-Repeat ARQ: The Joint Distribution of the Transmitter and the Receiver Resequencing Buffer Occupancies, Z. Rosberg and M. Sidi (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *IEEE Transactions on Communications* **38**, No. 9, 1430-1438 (1990).

Overflow Analysis for Finite Waiting Room Systems, R. Guérin and L. Y. C. Lien (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *IEEE Transactions on Communications* **38**, No. 9, 1569-1577 (1990).

Rearrangeable Operation of Large Crosspoint Switching Networks, A. Varma (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), J. Ghosh (University of Texas, Austin, TX), and C. J. Georgiou (IBM, Yorktown Heights, NY), *IEEE Transactions on Communications* **38**, No. 9, 1616-1624 (1990).

Placing Surface Mount Components Using Coarse/Fine Positioning and Vision, J. P. Baartman (Delft University, 2628 CD Delft, The Netherlands), A. E. Brennemann, S. J. Buckley (IBM, Yorktown Heights, NY), and M. O. Moed (Rensselaer Polytechnic Institute, Troy, NY), *IEEE Transactions on Components, Hybrids, and Manufacturing Technology* **13**, No. 3, 559-564 (1990).

A New Approach to the Simulation of the Coupled Point Defects and Impurity Diffusion, E. Rorris, R. R. O'Brien, F. F. Morehead, R. F. Lever, J. P. Peng, and G. R. Srinivasan (IBM Corporation, Route 52, Hopewell Junction, NY 12533), *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems* **9**, No. 10, 1113-1122 (1990).

Layer Assignment for Multichip Modules, J. M. Ho, M. Sarrafzadeh, G. Vijayan, and C. K. Wong (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems* **9**, No. 12, 1272-1277 (1990).

Global Routing Based on Steiner Min-Max Trees, C. Chiang (Northwestern University, Evanston, IL 60208), M. Sarrafzadeh, and C. K. Wong (IBM, Yorktown Heights, NY), *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems* **9**, No. 12, 1318-1325 (1990).

Partitioning Logic on Graph Structures to Minimize Routing Cost, G. Vijayan (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems* **9**, No. 12, 1326-1334 (1990).

Algorithm-Based Fault Tolerance on a Hypercube Multiprocessor, P. Banerjee (University of Illinois, Urbana, IL 61801), J. T. Rahmeh (University of Texas, Austin, TX), C. Stunkel (IBM, Yorktown Heights, NY), V. S. Nair, K. Roy, V. Balasubramanian (University of Illinois, Urbana, IL), and J. A. Abraham (University of Texas, Austin, TX), *IEEE Transactions on Computers* **39**, No. 9, 1132-1145 (1990).

Scheduling Periodic Jobs that Allow Imprecise Results, J.-Y. Chung (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), J. W. S. Liu, and K. J. Lin (University of Illinois, Urbana, IL), *IEEE Transactions on Computers* **39**, No. 9, 1156-1174 (1990).

Analysis of Detection Probability and Some Applications, R. David (CNRS, Ura 228, F-38402 St. Martin d'Heres, France) and K. Wagner (IBM, Poughkeepsie, NY), *IEEE Transactions on Computers* **39**, No. 10, 1284-1291 (1990).

Analyzing Scheduled Maintenance Policies for Repairable Computer Systems, E. de Souza e Silva (Federal University of Rio de Janeiro, Rio de Janeiro, Brazil) and H. R. Gail (IBM, Yorktown Heights, NY), *IEEE Transactions on Computers* **39**, No. 11, 1309-1324 (1990).

Measured Antenna Factors in the Range of 30 to 80 MHz of Some Tunable Dipoles Adjusted to their 80-MHz Length, A. A. Smith, Jr. (IBM Corporation, Neighborhood Road, Kingston, NY 12401), *IEEE Transactions on Electromagnetic Compatibility* **32**, No. 4, 307-308 (1990).

A Self-Aligned Nitrogen Implantation Process (SNIP) to Minimize Field Oxide Thinning Effect in Submicrometer LOCOS, S. Ratanaphanyarat (IBM Corporation, Route 52, Hopewell Junction, NY 12533), J. B. Kuang (Cornell University, Ithaca, NY), and S. S. Wong (Stanford University, Stanford, CA), *IEEE Transactions on Electron Devices* **37**, No. 9, 1948-1958 (1990).

Frequency Response of Advanced Silicon Bipolar Transistors at Low Temperature, K. A. Jenkins (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *IEEE Transactions on Electron Devices* **37**, No. 10, 2243-2249 (1990).

On the Scaling Property of Trench Isolation Capacitance for Advanced High-Performance ECL Circuits, P. F. Lu and C. T. Chuang (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *IEEE Transactions on Electron Devices* **37**, No. 10, 2270-2274 (1990).

A New Table of Constant Weight Codes, A. E. Brouwer (Technical University of Eindhoven, 5600 MB Eindhoven, The Netherlands), J. B. Shearer (IBM, Yorktown Heights, NY), N. J. A. Sloane, and W. D. Smith (AT&T Bell Laboratories, Murray Hill, NJ), *IEEE Transactions on Information Theory* **36**, No. 6, 1334-1380 (1990).

Micromagnetics of Closed-Edge Laminations, J. C. Slonczewski (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *IEEE Transactions on Magnetics* **26**, No. 5, 1322-1327 (1990).

Time-Resolved Domain Dynamics in Thin-Film Heads, B. Petek, P. L. Trouilloud, and B. E. Argyle (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *IEEE Transactions on Magnetics* **26**, No. 5, 1328-1330 (1990).

Magnetic, Transport and Magneto-optical Properties of U₂Sb_{1-x} Amorphous Films, T. R. McGuire, R. J. Gambino, M. W. McElfresh, and T. S. Plaskett (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *IEEE Transactions on Magnetics* **26**, No. 5, 1349-1357 (1990).

Corrosion Study in TbFeCoCr Amorphous Magneto-Optical Films, H. Kobayashi, K. Ogino (IBM Japan Ltd., 1 Kiriara, Fujisawa, Kanagawa 252, Japan), and S. Takayama (IBM Japan, Tokyo, Japan), *IEEE Transactions on Magnetics* **26**, No. 5, 1361-1363 (1990).

High Current Densities in Superconducting Films from Magnetization, T. R. McGuire, A. Gupta, G. Koren, and R. Gross (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *IEEE Transactions on Magnetics* **26**, No. 5, 1427-1429 (1990).

The Effects of Deposition Parameters on Iron Films RF Diode Sputtered in Argon-Nitrogen, R. E. Jones, Jr., J. Williams, and N. Staud (IBM Corporation, 5600 Cottle Road, San Jose, CA 95193), *IEEE Transactions on Magnetics* **26**, No. 5, 1456-1458 (1990).

Magnetoresistance Anisotropy and Magnetization Reversal Processes in Two Different Kinds of Amorphous Ferromagnets: a-Tb₂₀(Fe,Co)₈₀ and a-U₄₅Sb₄₅Mn₁₀, P. P. Freitas (CFMC, Avenida Prof. Gama Pinto 2, 1699 Lisbon, Portugal), L. V. Melo (INESC, Lisbon, Portugal), and T. S. Plaskett (IBM, Yorktown Heights, NY), *IEEE Transactions on Magnetics* **26**, No. 5, 1491-1493 (1990).

Modified Differential Phase Contrast Lorentz Microscopy for Improved Imaging of Magnetic Structures, J. N. Chapman (University of Glasgow, Glasgow G12 8QQ, Scotland, United Kingdom), I. R. McFadyen, and S. McVitie (IBM, San Jose, CA), *IEEE Transactions on Magnetics* **26**, No. 5, 1506-1511 (1990).

Numerical Micromagnetics: Rectangular Parallelpipeds, D. R. Fredkin (University of California at San Diego, La Jolla, CA 92093) and T. R. Koehler (IBM, San Jose, CA), *IEEE Transactions on Magnetics* **26**, No. 5, 1518-1520 (1990).

An Examination of Transition Noise by Lorentz Electron Microscopy, R. P. Ferrier, F. J. Martin (University of Glasgow, Glasgow G12 8QQ, Scotland, United Kingdom), T. C. Arnoldussen, and L. L. Nunnelle (IBM, San Jose, CA), *IEEE Transactions on Magnetics* **26**, No. 5, 1536-1538 (1990).

Role of Atomic Mobility in the Transition Noise of Longitudinal Media, T. Yogi, T. A. Nguyen, S. E. Lambert, G. L. Gorman, and C. Castillo (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *IEEE Transactions on Magnetics* **26**, No. 5, 1578-1580 (1990).

Magnetoelastic Properties of Very Thin Co-Alloy Films, D. Mauri, V. S. Speriosu, T. Yogi, G. Castillo, and D. T. Peterson (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *IEEE Transactions on Magnetics* **26**, No. 5, 1584-1586 (1990).

Magnetic and Recording Characteristics of CoCrTa/Cr Thin Film Media Prepared by FT Sputtering, K. Kawanabe, K. Hasegawa, and M. Naoe (IBM Japan, 1 Kiriara, Fujisawa, Kanagawa 252, Japan), *IEEE Transactions on Magnetics* **26**, No. 5, 1593-1595 (1990).

Gigabit Density Recording Using Dual-Element MR/Inductive Heads on Thin-Film Disks, C. Tsang, M.-M. Chen, T. Yogi, and K. Ju (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *IEEE Transactions on Magnetics* **26**, No. 5, 1689-1693 (1990).

Barkhausen Noise in Thin-Film Recording Heads, K. B. Klaassen and J. C. van Peppen (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *IEEE Transactions on Magnetics* **26**, No. 5, 1697-1699 (1990).

Magneto-optical Recording on Evaporated Co/Pt Multilayer Films, C.-J. Lin and H. V. Do (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *IEEE Transactions on Magnetics* **26**, No. 5, 1700-1702 (1990).

Anomalous Hall Effect Measurements of Domain Writing and Erasure in Magneto-optic Thin Films, B. C. Webb (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *IEEE Transactions on Magnetics* **26**, No. 5, 1715-1717 (1990).

Domain Edge Formation and Jitter Characteristics in Thermomagnetic Recording with Magnetic Field Modulation, D. C. Cheng, T. W. McDaniel, and C. R. Davis (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *IEEE Transactions on Magnetics* **26**, No. 5, 1903-1905 (1990).

Magnetization Behavior in Exchange-Coupled Co/TbFeCo Films, N. Matsubara, F. Sai (IBM Japan, 5-19 Sanbancho, Chiyoda-Ku, Tokyo 102, Japan), H. Wakabayashi, H. Notarys, and T. Suzuki (IBM, San Jose, CA), *IEEE Transactions on Magnetics* **26**, No. 5, 1906-1908 (1990).

Magnetic and Magneto-optical Properties and Crystallization Kinetics of Rapid-Thermally Crystallized Bi-substituted Garnet Films, T. Suzuki, G. Zaharchuk, G. Gorman, F. Sequeda (IBM Corporation, 650 Harry Road, San Jose, CA 95120), and P. Labun (Arizona State University, Tempe, AZ), *IEEE Transactions on Magnetics* **26**, No. 5, 1927-1929 (1990).

Volterra Modeling of Digital Magnetic Saturation Recording Channels, R. Hermann (IBM Corporation, Säumerstrasse 4, 8803 Rüschlikon, Switzerland), *IEEE Transactions on Magnetics* **26**, No. 5, 2125-2127 (1990).

A Theoretical Comparison of Detection Techniques on R-DAT, R. Wood (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *IEEE Transactions on Magnetics* **26**, No. 5, 2157-2159 (1990).

Recording Performance of an Inductive-Write, Wide-Shielded MR Readback Head with a Dual Layer Perpendicular Disk, D. J. Seagle, M. A. Meininger, T. J. Beaulieu, and C. J. Spector (IBM Corporation, 5600 Cottle Road, San Jose, CA 95193), *IEEE Transactions on Magnetics* **26**, No. 5, 2160-2162 (1990).

Simultaneous Detection of Readback Signals from Interfering Magnetic Recording Tracks Using Array Heads, L. C. Barbosa (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *IEEE Transactions on Magnetics* **26**, No. 5, 2163-2165 (1990).

Demonstration of 500 Megabits Per Square Inch with Digital Magnetic Recording, R. A. Jensen, J. Mortelmans, and R. Hauswitzer (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *IEEE Transactions on Magnetics* **26**, No. 5, 2169-2171 (1990).

Enhanced Decision Feedback Equalization, R. Wood (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *IEEE Transactions on Magnetics* **26**, No. 5, 2178-2180 (1990).

Longitudinal Media for 1 Gb/in² Areal Density, T. Yogi, T. Ching, T. A. Nguyen, K. C. Ju, G. L. Gorman, and G. Castillo (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *IEEE Transactions on Magnetics* **26**, No. 5, 2271-2276 (1990).

Error Rate Performance of Experimental Gigabit Per Square Inch Recording Components, T. D. Howell, D. P. McCown, T. A. Diola, Y.-S. Tang, K. R. Hense, and R. L. Gee (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *IEEE Transactions on Magnetics* **26**, No. 5, 2298-2302 (1990).

Analysis of Asymmetric Deterministic Bitshift Errors in a Hard Disk File, L. L. Nunnelley, M. A. Burleson, L. L. Williams, and I. A. Beardsley (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *IEEE Transactions on Magnetics* **26**, No. 5, 2306-2308 (1990).

Spectral Shaping for Peak Detection Equalization, H. K. Thapar, N. P. Sands (IBM Corporation, 650 Harry Road, San Jose, CA 95120), W. L. Abbott, and J. M. Cioffi (Stanford University, Stanford, CA), *IEEE Transactions on Magnetics* **26**, No. 5, 2309-2311 (1990).

Coding for Maximum Likelihood Detection on a Magnetic Recording Channel, L. J. Fredrickson (IBM Corporation, 5600 Cottle Road, San Jose, CA 95193), *IEEE Transactions on Magnetics* **26**, No. 5, 2315-2317 (1990).

A (D,K,C) = (0,3,5/2) Rate 8/10 Modulation Code I, L. J. Fredrickson (IBM Corporation, 5600 Cottle Road, San Jose, CA 95193), *IEEE Transactions on Magnetics* **26**, No. 5, 2318-2320 (1990).

Software Channel Approach to Data Banding, P. C. Arnett and D. Lam (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *IEEE Transactions on Magnetics* **26**, No. 5, 2324-2326 (1990).

Magnetics and Microstructure of Sputtered Ni₈₀Fe₂₀/SiO₂ Multilayer Films, M. A. Russak, C. V. Jahnes, M. E. Re, B. C. Webb, and S. M. Mirzamaani (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *IEEE Transactions on Magnetics* **26**, No. 5, 2332-2334 (1990).

Bi-layer Permalloy Films Grown in Orthogonal Applied Fields, F. Suits (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *IEEE Transactions on Magnetics* **26**, No. 5, 2353-2355 (1990).

In Situ Measurement of Flyheight Variations in Magnetic Storage Devices Through the Use of Sample Margin Signal Processing Techniques, G. J. Kerwin (IBM Corporation, Highway 52 & NW 37 Street, Rochester, MN 55901), *IEEE Transactions on Magnetics* **26**, No. 5, 2427-2429 (1990).

Magnetoresistive Read Magnetic Recording Head Offtrack Performance Assessment, P. I. Bonyhard and J. K. Lee (IBM Corporation, 5600 Cottle Road, San Jose, CA 95193), *IEEE Transactions on Magnetics* **26**, No. 5, 2448-2450 (1990).

Spatial Distribution of Overwrite Interference on Film Disks, D. Palmer and J. V. Peske (IBM Corporation, Rochester, MN 55901), *IEEE Transactions on Magnetics* **26**, No. 5, 2451-2453 (1990).

Signal to Noise Ratio of Thin Film Disks with Various Orientation Ratios, M. Mirzamaani, M. Re (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), S. E. Lambert (IBM, San Jose, CA), A. Praino (IBM, Yorktown Heights, NY), T. S. Petersen, and K. E. Johnson (IBM, Rochester, MN), *IEEE Transactions on Magnetics* **26**, No. 5, 2457-2459 (1990).

Side Fringing of Thin Film Heads with Pole Trimming, J. L. Su, K. Ju, J. Lo, and G. Countryman (IBM Corporation, 5600 Cottle Road, San Jose, CA 95193), *IEEE Transactions on Magnetics* **26**, No. 5, 2463-2465 (1990).

Characterization of Head Stability Induced Signal Fluctuation, Y.-S. Tang (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *IEEE Transactions on Magnetics* **26**, No. 5, 2466-2468 (1990).

A Track Density Model for Magnetoresistive Heads Considering Erase Bands, J. K. Lee and P. I. Bonyhard (IBM Corporation, 5600 Cottle Road, San Jose, CA 95193), *IEEE Transactions on Magnetics* **26**, No. 5, 2475-2477 (1990).

An Active Slider for Practical Contact Recording, C. E. Yeack-Scranton (IBM Corporation, 650 Harry Road, San Jose, CA 95120), V. D. Khanna, K. F. Etzold, and A. P. Praino (IBM, Yorktown Heights, NY), *IEEE Transactions on Magnetics* **26**, No. 5, 2478-2483 (1990).

Measurements of the Wear of a Thin Film Disk, P. B. P. Phipps (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *IEEE Transactions on Magnetics* **26**, No. 5, 2496-2498 (1990).

Tin Oxide Overcoats for Thin Film Magnetic Recording Media, V. J. Novotny and A. S. Kao (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *IEEE Transactions on Magnetics* **26**, No. 5, 2499-2501 (1990).

A Magnetometer for the Rapid and Nondestructive Measurement of Magnetic Properties on Rigid Disk Media, K. E. Johnson and M. G. Kerr (IBM Corporation, Rochester, MN 55901), *IEEE Transactions on Magnetics* **26**, No. 5, 2565-2567 (1990).

A Fast Scanning Magneto-optic Kerr M-H Hysteresigraph for Thin Film Media, C. S. Gudeman, M. V. Mitchell, and D. E. Peter (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *IEEE Transactions on Magnetics* **26**, No. 5, 2568-2570 (1990).

Magnetostriction Mapping of Soft Magnetic Films on Thick Rigid Substrates, C. S. Gudeman (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *IEEE Transactions on Magnetics* **26**, No. 5, 2580-2582 (1990).

On-line Tribology Measurements on Lubricated Rigid Disks, L. L. Nunnolley, M. A. Burleson (IBM Corporation, 5600 Cottle Road, San Jose, CA 95193), and G. G. Fuller (Stanford University, Stanford, CA), *IEEE Transactions on Magnetics* **26**, No. 5, 2679-2681 (1990).

Head/Disk Interface Failure Mechanism, J. C. Uy (IBM Corporation, 5600 Cottle Road, San Jose, CA 95193), *IEEE Transactions on Magnetics* **26**, No. 5, 2697-2699 (1990).

Reduction of Media Noise in Thin Film Metal Media by Lamination, S. E. Lambert, J. K. Howard, and I. L. Sanders (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *IEEE Transactions on Magnetics* **26**, No. 5, 2706-2708 (1990).

Determination of Thin Film Media Model Parameters Using DPC Imaging and Torque Measurements, I. A. Beardsley and V. S. Speriosu (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *IEEE Transactions on Magnetics* **26**, No. 5, 2718-2720 (1990).

Influence of Au and Ag at the Interface of Sputtered Giant Magnetoresistance Fe/Cr Multilayers, B. A. Gurney, D. R. Wilhoit, V. S. Speriosu and I. L. Sanders (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *IEEE Transactions on Magnetics* **26**, No. 5, 2747-2749 (1990).

Writing Temperature Estimation in Thermomagnetic Recording, T. W. McDaniel and M. R. Madison (IBM Corporation, 5600 Cottle Road, San Jose, CA 95193), *IEEE Transactions on Magnetics* **26**, No. 5, 2834-2836 (1990).

Performance Study and Analysis of Dual-Element Head on Thin-Film Disk for Gigabit-Density Recording, C. Tsang, M.-M. Chen, T. Yogi, and K. Ju (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *IEEE Transactions on Magnetics* **26**, No. 6, 2948-2953 (1990).

Considerations for High Data Rate Recording with Thin-Film Heads, R. Wood, M. Williams, and J. Hong (IBM Corporation, 5600 Cottle Road, San Jose, CA 95193), *IEEE Transactions on Magnetics* **26**, No. 6, 2954-2959 (1990).

Design Issues for Practical Rigid Disk Magnetoresistive Heads, P. I. Bonyhard (IBM Corporation, 5600 Cottle Road, San Jose, CA 95193), *IEEE Transactions on Magnetics* **26**, No. 6, 3001-3003 (1990).

A Theoretical Study of the Signal Response of a Shielded MR Sensor, C. Tsang (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *IEEE Transactions on Magnetics* **26**, No. 6, 3016-3021 (1990).

Air Bearing Parameter Effects on Take-Off Velocity, S. A. Bolasna (IBM Corporation, 5600 Cottle Road, San Jose, CA 95193), *IEEE Transactions on Magnetics* **26**, No. 6, 3033-3038 (1990).

Characterization of an Optoelectronic Terahertz Beam System, M. van Exter (Huygens Laboratories, Postbus 9504, 2300 RA Leiden, The Netherlands) and D. R. Grischowsky (IBM, Yorktown Heights, NY), *IEEE Transactions on Microwave Theory and Techniques* **38**, No. 11, 1684-1691 (1990).

Diagnostic-Strategy Selection for Series Systems, J. A. Nachlas (Virginia Polytechnic Institute, Blacksburg, VA 24061), S. R. Loney (Arbitron Company, Laurel, MD), and B. A. Binney (IBM, Endicott, NY), *IEEE Transactions on Reliability* **39**, No. 3, 273-280 (1990).

Experimental Evaluation of Computer Systems Reliability, R. Chillarege (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598) and D. P. Siewiorek (Carnegie Mellon University, Pittsburgh, PA), *IEEE Transactions on Reliability* **39**, No. 4, 403-408 (1990).

Extending Objects to Support Multiple Interfaces and Access Control, B. Hailpern and H. Ossher (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *IEEE Transactions on Software Engineering* **16**, No. 11, 1247-1257 (1990).

Geometric Approaches to Solve the Chebyshev Traveling Salesman Problem, Y. A. Bozer (University of Michigan, Ann Arbor, MI 48109), E. C. Schorn (IBM, Charlotte, NC), and G. P. Sharp (Georgia Institute of Technology, Atlanta, GA), *IEEE Transactions* **22**, No. 3, 238-254 (1990).

Symmetry Breaking in Distributed Networks, A. Itai (Technion, Israel Institute of Technology, Haifa, Israel) and M. Rodeh (IBM Haifa, Israel), *Information and Computation* **88**, No. 1, 60-87 (1990).

Knowledge and Common Knowledge in a Byzantine Environment: Crash Failures, C. Dwork (IBM Corporation, 650 Harry Road, San Jose, CA 95120) and Y. Moses (The Weizmann Institute of Science, Rehovot, Israel), *Information and Computation* **88**, No. 2, 156-186 (1990).

The Information Utility Project: A Glimpse into the Library of the Future, J. Slonim (University of Western Ontario, London N6A 5B7, Ontario, Canada) and M. A. Bauer (IBM Canada, Toronto, Ontario), *Information Processing & Management* **26**, No. 4, 467-488 (1990).

Generating Pseudo-Random Permutations and Maximum Flow Algorithms, N. Alon (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Information Processing Letters* **35**, No. 4, 201-204 (1990).

A Tight Lower Bound for the Train Reversal Problem, A. Aggarwal and T. Leighton (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Information Processing Letters* **35**, No. 6, 301-304 (1990).

Prefetching—A Performance Analysis, K. Kratzer, H. Wedeking (Universität Erlangen-Nürnberg, Martensstrasse 3, 8520 Erlangen, Federal Republic of Germany), and G. Zörntlein (IBM, San Jose, CA), *Information Systems* **15**, No. 4, 445-452 (1990).

An Effective Representation of Complex Clauses in a Relational Database, K. Rothermel (IBM Corporation, Tiergartenstrasse 8, 6900 Heidelberg, Federal Republic of Germany), *Information Systems* **15**, No. 4, 463-477 (1990).

Evidence that the Cl_2F^+ Cation Has an Asymmetric Bent (C_s) $\text{Cl}-\text{Cl}-\text{F}^+$ Structure, G. Frenking (Universität Marburg, Hans-Meerwein-Strasse, D-3550 Marburg, Federal Republic of Germany) and W. Koch (IBM, Heidelberg, Federal Republic of Germany), *Inorganic Chemistry* **29**, No. 22, 4513-4517 (1990).

Surface Studies of GaAs Treated by Hydrogen and Nitrogen rf Plasma, A. Callegari, D. Lacey (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), D. A. Buchanan (IBM, Hopewell Junction, NY), E. Latta, M. Gasser (IBM, Rüschlikon, Switzerland), and A. Paccagnella (University of Trento, Trento, Italy), *Institute of Physics Conference Series*, No. 106, 399-404 (1990).

Local Operating Temperatures in GaAs Quantum Well Lasers, H. Brugger (Daimler Benz AG, D-7900 Ulm, Federal Republic of Germany), P. W. Epperlein (IBM, Rüschlikon, Switzerland), S. Beeck, and G. Abstreiter (Technical University of Munich, Garching, Federal Republic of Germany), *Institute of Physics Conference Series*, No. 106, 771-776 (1990).

Surface Structured Quantum Effect Devices on GaAs/AlGaAs, K. Ismail (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Institute of Physics Conference Series*, No. 106, 837-842 (1990).

Partitioning and Floor-Planning for Data-Path Chip (Microprocessor) Layout, W. K. Luk (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), A. A. Dean, and J. W. Mathews (IBM, Essex Junction, VT), *Integration, the VLSI Journal* **10**, No. 1, 89-108 (1990).

Finite Element/Newton Method for the Analysis of Czochralski Crystal Growth with Diffuse-Gray Radiative Heat Transfer, D. E. Bornside, T. A. Kinney, R. A. Brown (Massachusetts Institute of Technology, Cambridge, MA 02139), and G. Kim (IBM, Hopewell Junction, NY), *International Journal for Numerical Methods in Engineering* **30**, No. 1, 133-154 (1990).

Ranking Intervals Under Visibility Constraints, H. Edelsbrunner (University of Illinois, Urbana, IL 61801), M. H. Overmars (State University of Utrecht, Utrecht, The Netherlands), E. Welzl (Free University of Berlin, Berlin, Federal Republic of Germany), I. B. Hartman (IBM Israel, Haifa, Israel), and J. A. Feldman (Graz Technical University, Graz, Austria), *International Journal of Computer Mathematics* **348**, No. 3-4, 129-144 (1990).

Entropy at a Weight-Per-Symbol and Embeddings of Markov Chains, B. Marcus (IBM Corporation, 650 Harry Road, San Jose, CA 95120) and S. Tuncel (University of Washington, Seattle, WA), *Inventiones Mathematicae* **102**, No. 2, 235-266 (1990).

Ultrasonic Attenuation Maps of Liver Based on a Conventional B-Scan and an Amplitude Loss Technique, A. Shmulewitz (Advance Technology Laboratories, 22100 Bothell Highway S.E., Bothell, WA 98041), Z. Heyman (Tel Aviv University, Tel Aviv, Israel), E. Walach, B. Ramot (IBM Israel, Haifa, Israel), and Y. Itzhak (Tel Aviv University, Tel Aviv, Israel), *Investigative Radiology* **25**, No. 10, 1095-1101 (1990).

Magnetic Field Dependence of 1/Ti of Human Brain Tumors: Correlations with Histology, N. Lundbom (University of Turku, SF-20500 Turku 50, Finland), R. D. Brown, S. H. Koenig (IBM, Yorktown Heights, NY), T. A. Lansen, M. P. Valsamis, and S. S. Kasoff (New York Medical College, Valhalla, NY), *Investigative Radiology* **25**, No. 11, 1197-1205 (1990).

J

Materials Issues for Advanced Electronic and Optoelectronic Connectors, J. Crane (Olin Corporation, New Haven, CT 06504) and S. Wen (IBM, Somers, NY), *JOM—Journal of the Minerals, Metals and Materials Society* **42**, No. 9, 37-39 (1990).

Fluctuations in the Flat and Collapsed Phases of Polymerized Membranes, F. F. Abraham (IBM Corporation, 650 Harry Road, San Jose, CA 95120) and D. R. Nelson (Harvard University, Cambridge, MA), *Journal de Physique* **51**, No. 2, 2653-2672 (1990).

Low Temperature Behavior of 3-D Spin Glasses in a Magnetic Field, S. Caracciolo (Scuola Normale Superiore, Pisa, Italy), G. Parisi (Università di Roma II, Tor Vergata, Italy), S. Patarnello (IBM, Yorktown Heights, NY), and N. Sourlas (CNRS, Paris, France), *Journal de Physique* **51**, No. 17, 1877-1895 (1990).

Islands and Holes on the Free Surface on Thin Diblock Copolymer Films. I. Characteristics of Formation and Growth, G. Coulon, B. Collin, D. Ausserre, D. Chatenay (Université P. M. Curie, 11 Rue Pierre et Marie Curie, 75231 Paris 05, France), and T. P. Russell (IBM, San Jose, CA), *Journal de Physique* **51**, No. 24, 2801-2811 (1990).

Improved Routing Strategies with Succinct Tables, B. Awerbuch (Massachusetts Institute of Technology, Cambridge, MA 02139), A. Bar-Noy (Stanford University, Stanford, CA), L. Linial (IBM, San Jose, CA), and D. Peleg (The Weizmann Institute, Rehovot, Israel), *Journal of Algorithms* **11**, No. 3, 307-341 (1990).

Lattice-Parameter Determination for Powders Using Synchrotron Radiation, M. Hart (The University, Manchester, M13 9PL, England, United Kingdom), R. J. Cernik (SERC Daresbury Laboratory, Warrington, England, United Kingdom), W. Parrish, and H. Toraya (IBM, San Jose, CA), *Journal of Applied Crystallography* **23**, Part 4, 286-291 (1990).

Modal Sensors/Actuators, C.-K. Kee (Cornell University, Ithaca, NY) and F. C. Moon (IBM, San Jose, CA), *Journal of Applied Mechanics (ASME)* **57**, No. 2, 434-441 (1990).

Optimization of Self-Acting Gas Bearings for Maximum Static Stiffness, M. P. Robert (IBM Corporation, 5600 Cottle Road, San Jose, CA 95193), *Journal of Applied Mechanics (ASME)* **57**, No. 3, 758-761 (1990).

Monte Carlo Simulation of Photoelectron Emission from a Gold Specimen, K. Takeuchi and K. Murata (IBM Japan, Ltd., Yasu 800 Ichimiya, Yasu-cho, Yasu-gun, Shiga 520-23, Japan), *Journal of Applied Physics* **68**, No. 6, 2955-2961 (1990).

Kinetic Description of the Transition from a One-Phase to a Two-Phase Growth Regime in Al/Pd Lateral Diffusion Couples, B. Blanpain, J. W. Mayer (Cornell University, Ithaca, NY 14853), J. C. Liu, and K. N. Tu (IBM, Yorktown Heights, NY), *Journal of Applied Physics* **68**, No. 7, 3259-3267 (1990).

Measurements of Domain-Wall Energy Density for Amorphous Rare Earth-Transition Metal Thin Films, R. A. Hajjar and H.-P. D. Shieh (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Journal of Applied Physics* **68**, No. 8, 4199-4202 (1990).

Interference Resonances in the Permeability of Laminated Magnetic Thin Films, B. C. Webb, M. E. Re, M. A. Russak, and C. V. Jahnes (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Journal of Applied Physics* **68**, No. 8, 4290-4293 (1990).

The Microstructure of Fe and Ag Thin Films Grown by Molecular-Beam Epitaxy on GaAs (001), C. J. Chien, J. C. Brayman (Stanford University, Stanford, CA 94305), and R. F. C. Farrow (IBM, San Jose, CA), *Journal of Applied Physics* **68**, No. 8, 4343-4345 (1990).

An All-Acoustic Parametric Amplifier in Superfluid Helium, D. R. Wright (SEMATECH, 2706 Montopous Drive, Austin, TX 78741), J. S. Foster (IBM, San Jose, CA), B. Hadimioglu (Xerox Palo Alto Research Center, Palo Alto, CA), and C. F. Quate (Stanford University, Stanford, CA), *Journal of Applied Physics* **68**, No. 9, 4438-4445 (1990).

Reversed Magnetic Anisotropy in Deformed (100) Cu/Ni/Cu Structures, C.-A. Chang (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Journal of Applied Physics* **68**, No. 9, 4873-4875 (1990).

Controlling Photoimaging of Epoxies by Blending to a Specific Molecular Weight, D. J. Russell (IBM Corporation, 1701 North Street, Endicott, NY 12533), *Journal of Applied Polymer Science* **41**, Nos. 7&8, 1753-1764 (1990).

A Dynamic Reaction Coordinate Approach to Ab Initio Reaction Pathways: Application to the 1,5 Hexadiene Cope Rearrangement, S. A. Maluendes (National Institute of La Plata, Sucursal 4, RA-1900 La Plata, Argentina) and M. Dupuis (IBM, Kingston, NY), *Journal of Chemical Physics* **92**, No. 8, 5902-5911 (1990).

A Comparative Study of Density Functional Models to Estimate Molecular Atomization Energies, E. Clementi and S. J. Chakravorty (IBM Corporation, Neighborhood Road, Kingston, NY 12401), *Journal of Chemical Physics* **93**, No. 4, 2591-2602 (1990).

Atomic Scale Desorption Processes Induced by the Scanning Tunneling Microscope, I.-W. Lyo and P. Avouris (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Journal of Chemical Physics* **93**, No. 6, 4479-4480 (1990).

Some Results for Hard Spheres at a Hard Wall Using the Inhomogeneous Percus-Yevick Equation and a Modified Lovett-Mou-Buff Wetheim Equation, M. Plischke (Simon Fraser University, Burnaby, British Columbia V5A 1S6, Canada) and D. Henderson (IBM, San Jose, CA), *Journal of Chemical Physics* **93**, No. 6, 4489-4490 (1990).

Molecular Beam Studies of H-2 and D-2 Dissociative Chemisorption on Pt(111), A. C. Luntz, J. K. Brown, and M. D. Williams (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Journal of Chemical Physics* **93**, No. 7, 5240-5246 (1990).

Ab Initio Oligomer Calculations of Dynamic Properties of Polyacetylene, C. X. Cui, M. Kertesz (Georgetown University, Washington, DC 20057), and M. Dupuis (IBM, Kingston, NY), *Journal of Chemical Physics* **93**, No. 8, 5890-5892 (1990).

Composite Overlapping Meshes for the Solution of Partial Differential Equations, G. Cheshire and W. D. Henshaw (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Journal of Computational Physics* **90**, No. 1, 1-64 (1990).

Threshold Accepting: A General Purpose Optimization Algorithm Appearing Superior to Simulated Annealing, G. Dueck and T. Scheuer (IBM Germany, Heidelberg, Federal Republic of Germany), *Journal of Computational Physics* **90**, No. 1, 161-175 (1990).

Calculation of Unimolecular Rate Constants for Common Metalorganic Vapor Phase Epitaxy Precursors via RRKM Theory, N. I. Buchan and J. M. Jasinski (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Journal of Crystal Growth* **106**, Nos. 2/3, 227-238 (1990).

Lagrangian Formulation of the Equations of Motion for Elastic Mechanisms with Mutual Dependence Between Rigid Body and Elastic Motions. Part I: Element Level Equations, S. Nagarajan (IBM Corporation, Rochester, MN 55901) and D. A. Turcic (University of Wisconsin, Madison, WI), *Journal of Dynamic Systems Measurement and Control (ASME)* **112**, No. 2, 203-214 (1990).

Lagrangian Formulation of the Equations of Motion for Elastic Mechanisms with Mutual Dependence Between Rigid Body and Elastic Motions. Part II: System Equations, S. Nagarajan (IBM Corporation, Rochester, MN 55901) and D. A. Turcic (University of Wisconsin, Madison, WI), *Journal of Dynamic Systems Measurement and Control (ASME)* **112**, No. 2, 215-224 (1990).

A Model for the Scanning Tunneling Microscope Operating in an Electrolyte Solution, W. Schmickler (Utah State University, Logan, UT 84322) and D. Henderson (IBM, San Jose, CA), *Journal of Electroanalytical Chemistry and Interfacial Electrochemistry* **290**, No. 1&2, 283-291 (1990).

Considerations for the Development of Radiation-Resistant Devices and VLSI Circuits, N. F. Haddad (IBM Corporation, 9500 Godwin Drive, Manassas, VA 22110), *Journal of Electronic Materials* **19**, No. 7, 603-607 (1990).

X-Ray Lithography, Where It Is Now and Where It Is Going, J. R. Maldonado (IBM Corporation, Route 52, Hopewell Junction, NY 12533), *Journal of Electronic Materials* **19**, No. 7, 699-709 (1990).

Radiation Damage and Its Effect on Hot Carrier Induced Instability of 0.5- μ m CMOS Devices Patterned Using Synchrotron X-Ray Lithography, C. C. H. Hsu, L. K. Wang, J. Y. C. Sun, M. R. Wordeman, and T. H. Ning (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Journal of Electronic Materials* **19**, No. 7, 721-725 (1990).

Hole Trapping in E-Beam Irradiated SiO₂ Films, J. M. Aitken (IBM Corporation, Route 52, Hopewell Junction, NY 12533) and R. F. Dekeersmaecker (International University of Microelectronics, Louvain, Belgium), *Journal of Electronic Materials* **19**, No. 7, 733-737 (1990).

The Mechanical Behavior of Silicon During Small Scale Indentation, G. M. Pharr (Rice University, P.O. Box 1892, Houston, TX 77251), W. C. Oliver (Oak Ridge National Laboratory, Oak Ridge, TN), and D. R. Clarke (IBM, Yorktown Heights, NY), *Journal of Electronic Materials* **19**, No. 9, 881-887 (1990).

Influence of Superimposed Hydrostatic Pressure on Bending Fracture and Formability of a Low Carbon Steel Containing Globular Sulfides, A. S. Kao, H. A. Kuhn, W. A. Spitzig, and O. Richmond (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Journal of Engineering Materials and Technology (ASME)* **112**, No. 1, 26-30 (1990).

Physical Modeling of Ductile Fracture During Metalforming Process, A. S. Kao (IBM Corporation, 650 Harry Road, San Jose, CA 95120) and H. A. Kuhn (University of Pittsburgh, Pittsburgh, PA), *Journal of Engineering Materials and Technology (ASME)* **112**, No. 3, 302-308 (1990).

Organization of Public Events in Long-Term Memory, N. R. Brown (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Journal of Experimental Psychology: General* **119**, No. 3, 297-314 (1990).

Development Efficiency in Electrophotography, L. B. Schein, G. Beardsley (IBM Corporation, 650 Harry Road, San Jose, CA 95120), and M. Moore (IBM, Boulder, CO), *Journal of Imaging Technology* **16**, No. 4, 129-135 (1990).

Microstructure and Mechanical Behavior of Al-Mg/Ni-P Composites, V. Raman (IBM Corporation, 5600 Cottle Road, San Jose, CA 95193), *Journal of Materials Research* **5**, No. 8, 1684-1696 (1990).

Evaluation of a Silicon-Containing Benzocyclobutene Thermoset Resin as a Plasma Etch Stop, S. R. Cain, L. J. Matienzo, and D. W. Wang (IBM Corporation, 1701 North Street, Endicott, NY 12533), *Journal of Materials Research* **5**, No. 8, 1733-1738 (1990).

The Preparation and Processing of Bulk Superconducting Ceramic Nd_{1.85}Ce_{0.15}CuO_{4-y}, M. E. Lopez-Morales, R. J. Savoy, and P. M. Grant (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Journal of Materials Science* **5**, No. 10, 2041-2044 (1990).

Silicide Precipitation and Silicon Crystallization in Nickel Implanted Amorphous Silicon Thin Films, R. C. Cammarata (Johns Hopkins University, Baltimore, MD 21218), C. V. Thompson (Massachusetts Institute of Technology, Cambridge, MA), C. Hayzelden (Harvard University, Cambridge MA), and K. N. Tu (IBM, Yorktown Heights, NY), *Journal of Materials Science* **5**, No. 10, 2133-2138 (1990).

Model of Synchronized Epileptiform Bursts Induced by High Potassium in CA₃ Region of Rat Hippocampal Slice. Role of Spontaneous EPSPs in Initiation, R. D. Traub (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598) and R. Dingledine (University of North Carolina, Chapel Hill, NC), *Journal of Neurophysiology* **64**, No. 3, 1009–1018 (1990).

Photochemical Deposition of Thin Films from the Metal Hexacarbonyls, K. A. Singmaster, F. A. Houle, and R. J. Wilson (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Journal of Physical Chemistry* **94**, No. 17, 6864–6875 (1990).

A Model Analytic Potential Energy Function for Formyl Radical Decomposition, S.-W. Cho, W. L. Hase (Wayne State University, Detroit, MI), and K. N. Swamy (IBM, Kingston, NY), *Journal of Physical Chemistry* **94**, No. 19, 7371–7377 (1990).

Some Calculations of the Density Profile of Inhomogeneous Hard Spheres Using the Fischer–Methfessel Approximation, J. Quintana and D. Henderson (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Journal of Physical Chemistry* **94**, No. 20, 7789–7793 (1990).

Molecular Dynamics Simulations of Liquid Water Using the NCC Ab Initio Potential, U. Niesar, G. Corongiu, E. Clementi, G. R. Kneller, and D. K. Bhattacharya (IBM Corporation, Neighborhood Road, Kingston, NY 12401), *Journal of Physical Chemistry* **94**, No. 20, 7949–7956 (1990).

Photoemission Valence-Band Structure of Hume–Rothery-Type Metallic Glasses, H. G. Boyen, P. Häussler, F. Baumann (Universität Karlsruhe, D-75 Karlsruhe 1, Federal Republic of Germany), U. Mizutani (University of Nagoya, Nagoya, Japan), R. Zehringer, P. Oelhafen, H. J. Guntherodt (Universität Basel, Basel, Switzerland), and V. L. Moruzzi (IBM, Yorktown Heights, NY), *Journal of Physics, Condensed Matter* **2**, No. 37, 7699–7705 (1990).

Phenylquinoxaline–Aryl Ester Block Copolymers, J. W. Labadie and J. L. Hedrick (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Journal of Polymer Science, Polymer Chemistry* **28**, No. 12, 3467–3480 (1990).

On the Melting Behavior of a Thermotropic Rigid Random Copolyester Based on Terephthalic Acid and Substituted Hydroquinones, A. M. Ghanem, L. C. Dickinson, R. S. Porter (University of Massachusetts, Amherst, MA 01003), and A. E. Zachariades (IBM, San Jose, CA), *Journal of Polymer Science, Polymer Physics* **28**, No. 11, 1891–1902 (1990).

An Improved Method for Measuring the Thermal Coefficient of Linear Expansion of Flexible Polymer Films, C. S. Kim and T. L. Smith (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Journal of Polymer Science, Polymer Physics* **28**, No. 11, 2119–2126 (1990).

Raman Active Phonons in the High- T_c Superconductors: A Global Point of View, G. Burns and F. H. Dacol (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Journal of Solid State Chemistry* **88**, No. 1, 188–192 (1990).

The Influence of Oxygen Activity on T , T' , and T^* Phase Stabilities in (La, RE)₂CuO₄ Systems, J. F. Bringley, S. S. Trail, and B. A. Scott (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Journal of Solid State Chemistry* **88**, No. 2, 590–593 (1990).

Current Transport Across Grain Boundaries in Superconducting YBa₂Cu₃O₇ Films, J. Mannhart (IBM Corporation, Säumerstrasse 4, 8803 Rüschlikon, Switzerland), *Journal of Superconductivity* **3**, No. 3, 281–285 (1990).

Surface Stress Effects on Indentation Fracture Sequence, R. Tandon, D. J. Green (Pennsylvania State University, University Park, PA 16802), and R. F. Cook (IBM, Yorktown Heights, NY), *Journal of the American Ceramic Society* **73**, No. 9, 2619–2627 (1990).

Viscosity of Porous Glasses, V. M. Sura (Jupiter Technologies, Inc., Ithaca, NY) and P. C. Panda (IBM, Yorktown Heights, NY), *Journal of the American Ceramic Society* **73**, No. 9, 2697–2701 (1990).

Molecular Sequence Effect on the ¹³C Carbonyl Chemical Shift Shielding Tensor, F. Separovic (CSIRO, P.O. Box 52, North Ryde, NSW 2113, Australia), R. Smith (University of Queensland, Brisbane, Australia), C. S. Yannoni (IBM, San Jose, CA), and B. A. Cornell (CSIRO, North Ryde, Australia), *Journal of the American Chemical Society* **112**, No. 23, 8324–8328 (1990).

Theoretical Investigations of Terminal Alkenes as Putative Suicide Substrates of Cytochrome P-450, B. T. Luke (IBM Corporation, Neighborhood Road, Kingston, NY 12401), J. R. Collins, G. H. Loew (Molecular Research Institute, Palo Alto, CA), and A. D. McLean (IBM, San Jose, CA), *Journal of the American Chemical Society* **112**, No. 24, 8686–8691 (1990).

C₆₀ Has Icosahedral Symmetry, R. D. Johnson, G. Meijer, and D. S. Bethune (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Journal of the American Chemical Society* **112**, No. 24, 8983–8984 (1990).

Analysis of Database Performance with Dynamic Locking, I. K. Ryu (Digital Equipment Corporation, 800 West El Camino Real, Mountain View, CA 94040) and A. Thomasian (IBM, Yorktown Heights, NY), *Journal of the Association for Computing Machinery* **37**, No. 3, 491–523 (1990).

Knowledge and Common Knowledge in a Distributed Environment, J. Y. Halpern (IBM Corporation, 650 Harry Road, San Jose, CA 95120) and Y. Moses (The Weizmann Institute of Science, Rehovot, Israel), *Journal of the Association for Computing Machinery* **37**, No. 3, 549–587 (1990).

XPS Studies of Anodic Surface Films on Copper Electrodes, W. Kautek and J. G. Gordon II (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Journal of the Electrochemical Society* **137**, No. 9, 2672–2677 (1990).

Scanning Tunneling Microscopy and Raman Spectroscopy of Pyrolytic Graphite Electrodes, L. M. Siperko (IBM Corporation, 1701 North Street, Endicott, NY 12533), *Journal of the Electrochemical Society* **137**, No. 9, 2791–2794 (1990).

Transpassive Dissolution of 420 Stainless Steel in Concentrated Acids under Electropolishing Conditions, M. Datta and D. Vercruysse (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Journal of the Electrochemical Society* **137**, No. 10, 3016–3023 (1990).

Calculation of Galvanic Currents and Potentials Using a p-Type Finite Element Method, R. B. Morris (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Journal of the Electrochemical Society* **137**, No. 10, 3039–3041 (1990).

Oxidation Kinetics of a Pb-3 Atom Percent in Alloy, M.-X. Zhang, Y. A. Chang (University of Wisconsin, Madison, WI 53706), and V. C. Marcotte (IBM, Hopewell Junction, NY), *Journal of the Electrochemical Society* **137**, No. 10, 3158–3162 (1990).

XPS Studies of Immersed Silver Electrodes: Coverage and Bonding State of Specifically Adsorbed Chloride, W. Kautek and J. G. Gordon II (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Journal of the Electrochemical Society* **137**, No. 11, 3405–3409 (1990).

A Sequential Sampling Plan for Federal Standard 209, D. W. Cooper and D. C. Milholland (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Journal of the IES* **33**, No. 5, 28–32 (1990).

123 Near Equilibrium Samples: Anomalies of the Lattice Parameters and Some Physical Properties, S. Rusiecki, B. Bucher, E. Kaldis, E. Jilek, J. Karpinski (Laboratorium für Festkörperphysik ETH, CH-8093 Zurich, Switzerland), C. Rossel (IBM, Rüschlikon, Switzerland), B. Pümpin, H. Keller, W. Kündig (Physik-Institut der Universität Zürich, Zürich, Switzerland), and T. Kreskels (University of Antwerp, Ruca, Belgium), *Journal of the Less Common Metals* **164/165**, No. 1/2, 31–38 (1990).

Magnetic and Electronic Properties of $\text{YBa}_2\text{Cu}_3\text{O}_x$ ($6.5 < x < 7.0$) Studied by Muon Spin Rotation, B. Pümpin, H. Keller, W. Kündig, I. M. Savic, J. W. Schneider, H. Simmler, P. Zimmermann (University of Zürich, CH-8001 Zürich, Switzerland), E. Kaldis, S. Rusiecki (Swiss Federal Institute of Technology, Zürich, Switzerland), C. Rossel (IBM, Rüschlikon, Switzerland), and E. M. Forgan (University of Birmingham, Birmingham B65, West Midlands, England), *Journal of the Less Common Metals* **164/165**, No. 1/2, 994–1008 (1990).

Frequency, Linewidth and Relaxation of Cu NQR Signals in the Superconductor $\text{YBa}_{1-x}\text{Ca}_x\text{Cu}_3\text{O}_{8-x}$, I. Mangelschots (IBM Corporation, Säumerstrasse 4, 8803 Rüschlikon, Switzerland), M. Mali, J. Roos, H. Zimmermann, D. Brinkmann (University of Zürich, Zürich, Switzerland), J. Karpinski, E. Kaldis, and S. Rusiecki (Laboratorium für Festkörperphysik-ETH, Zürich, Switzerland), *Journal of the Less-Common Metals* **164/165**, No. 1/2, 78–83 (1990).

Cu Nuclear Quadrupole Resonance Study of $\text{YBa}_2\text{Cu}_3\text{O}_8$ at High Pressure, H. Zimmermann, M. Mali (Universität Zürich, Schönberggasse 9, CH-8001 Zürich, Switzerland), I. Mangelschots (IBM, Rüschlikon, Switzerland), J. Roos, D. Brinkmann (Universität Zürich, Zürich, Switzerland), J. Karpinski, S. Rusiecki, and E. Kaldis (Laboratorium für Festkörperphysik-ETH, Zürich, Switzerland), *Journal of the Less-Common Metals* **164/165**, No. 1/2, 132–137 (1990).

Spin Susceptibility and Spin Dynamics at Cu Sites in $\text{YBa}_2\text{Cu}_3\text{O}_8$, H. Zimmermann, M. Mali (University of Zürich, Schönberggasse 9, CH-8001 Zurich, Switzerland), I. Mangelschots (IBM, Rüschlikon, Switzerland), J. Roos, L. Pauli, D. Brinkmann (University of Zürich, Zürich, Switzerland), J. Karpinski, S. Rusiecki, and E. Kaldis (Laboratorium für Festkörperphysik-ETH, Zürich, Switzerland), *Journal of the Less-Common Metals* **164/165**, No. 1/2, 138–145 (1990).

In-Situ MBE Growth of Epitaxial CuO Films with a Source of Activated Oxygen, J.-P. Locquet (IBM Corporation, Säumerstrasse 4, 8803 Rüschlikon, Switzerland), *Journal of the Less-Common Metals* **164/165**, No. 1/2, 300–306 (1990).

Edge Junction SQUIDs and Multilayers Using High- T_c Superconductors, R. B. Laibowitz, R. H. Koch, A. Gupta, W. J. Gallagher, B. Oh, and J. M. Viggiano (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Journal of the Less-Common Metals* **164/165**, No. 1/2, 1523–1528 (1990).

Structured Priority Queue with Batch Arrivals, Y. Takahashi (Nippon Telegraph & Telegram Publishing Corporation, Musashino, Tokyo 180, Japan) and H. Takagi (IBM, Tokyo, Japan), *Journal of the Operations Research Society of Japan* **33**, No. 3, 242–261 (1990).

Completing the Iron Period: Double Resonance, Fluorescence Dip Rydberg Spectroscopy and Ionization Potentials of Titanium, Vanadium, Iron, Cobalt, and Nickel, R. H. Page and C. S. Gudeman (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Journal of the Optical Society B* **7**, No. 9, 1761–1771 (1990).

Far Infrared Time Domain Spectroscopy with Terahertz Beams of Dielectrics and Semiconductors, D. Grischowsky, S. Keiding, M. Vanexter, and C. Fittinger (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Journal of the Optical Society B* **7**, No. 10, 2006–2015 (1990).

Thermal Decomposition of Copper Azole Complexes, A. D. Katnani, K. I. Papatthomas (IBM Corporation, 1701 North Street, Endicott, NY 12533), D. P. Drolet, and A. J. Lees (State University of New York, Binghamton, NY), *Journal of Thermal Analysis* **35**, No. 7, 2125–2133 (1990).

Friction, Wear, and Interfacial Chemistry in Thin Film Magnetic Rigid Disk Files, M. T. Dugger, Y. W. Chung (Northwestern University, Evanston, IL 60208), B. Bhushan (University of California, Berkeley, CA), and M. Rothschild (IBM, Rochester, MN), *Journal of Tribology* **112**, No. 2, 238–245 (1990).

Grinding Temperatures for Magnetic Ceramics and Steel, S. Chandrasekar, T. N. Farris (Purdue University, West Lafayette, IN 47907), and B. Bhushan (IBM, San Jose, CA), *Journal of Tribology* **112**, No. 3, 535–541 (1990).

Generation of Submicrometer Particles in Dry Sliding Contact, J. L. Xuan, H. S. Cheng (Northwestern University, Evanston, IL 60208), and R. J. Miller (IBM, Yorktown Heights, NY), *Journal of Tribology* **112**, No. 4, 684–691 (1990).

Process Effects on Radio Frequency Diode Reactively Sputtered ZrO_2 Films, M. M. Yang, T. M. Reith (IBM Corporation, 5600 Cottle Road, San Jose, CA 95193), and C. J. Lin (IBM, San Jose, CA), *Journal of Vacuum Science and Technology A* 8, No. 6, 3925–3928 (1990).

Composition and Structure of Boron Nitride Films Deposited by Chemical Vapor Deposition from Borazine, J. Kouvetakis, V. V. Patel, C. W. Miller, D. B. Beach (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Journal of Vacuum Science and Technology A* 8, No. 6, 3929–3933 (1990).

Spontaneous Decomposition of Dimethyl Gold Hexafluoroacetylacetonate on Ion Bombarded Surfaces, S. J. Kirch and A. Wagner (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Journal of Vacuum Science and Technology A* 8, No. 5, 3701–3706 (1990).

Ion Energetics in Electron Cyclotron Resonance Discharges, W. M. Holber (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598) and J. Forster (IBM, Hopewell Junction, NY), *Journal of Vacuum Science and Technology A* 8, No. 5, 3720–3725 (1990).

(100) and (111) Ni Films Epitaxially Grown on Cu by the Metal–Metal Epitaxy on Silicon Technique Near Room Temperatures, C.-A. Chang (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Journal of Vacuum Science and Technology A* 8, No. 5, 3779–3784 (1990).

Ta as a Barrier for the Cu/PtSi, Cu/Si and Al/PtSi Structures, C.-A. Chang (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Journal of Vacuum Science and Technology A* 8, No. 5, 3796–3802 (1990).

Temperature-Dependent Formation of Interface States and Schottky Barriers at Metal/Molecular-Beam Epitaxy GaAs(100) Junctions, S. Chang, J. L. Shaw, R. E. Viturro, L. J. Brillson (Xerox Webster Research Center, Webster, NY 14580), P. D. Kirchner, and J. M. Woodall (IBM, Yorktown Heights, NY), *Journal of Vacuum Science and Technology A* 8, No. 5, 3803–3808 (1990).

Development of a Chlorofluorocarbon/Oxygen Reactive Ion Etching Chemistry for Fine-Line Tungsten Patterning, T. H. Daubenspeck (IBM Corporation, P.O. Box A, Essex Junction, VT 05452) and P. C. Sukanek (Clarkson University, Potsdam, NY), *Journal of Vacuum Science and Technology B* 8, No. 4, 586–595 (1990).

Transport Properties and Applications of Unstrained $\text{In}_{0.75}\text{Ga}_{0.25}\text{As}/\text{Al}_{0.6}\text{Ga}_{0.4}\text{As}$ Heterojunctions, D. V. Rossi, E. R. Fossum (Columbia University, New York, NY 10027), P. D. Kirchner, and J. M. Woodall (IBM, Yorktown Heights, NY), *Journal of Vacuum Science and Technology B* 8, No. 4, 779–782 (1990).

Photoexcited Carrier Lifetimes and Spatial Transport in Surface-Free GaAs Homostructures, L. M. Smith, D. J. Wolford, J. Martinsen (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), R. Venkatasubramanian, and S. K. Ghandhi (Rensselaer Polytechnic Institute, Troy, NY), *Journal of Vacuum Science and Technology B* 8, No. 4, 787–792 (1990).

Studies of GaAs–Oxide Interfaces With and Without Si Interlayer, J. L. Freeouf, D. A. Buchanan, S. L. Wright, T. N. Jackson, J. Batey, B. Robinson, A. Callegari, A. Paccagnella, and J. M. Woodall (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Journal of Vacuum Science and Technology B* 8, No. 4, 860–866 (1990).

Transition Metal–GaP(110) Interfaces: The Roles of Impurity States and Metallicity, R. Ludeke, M. Prietsch, A. B. McLean, and A. Santoni (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Journal of Vacuum Science and Technology B* 8, No. 4, 964–973 (1990).

Metal/GaAs Interface Chemical and Electronic Properties: GaAs Orientation Dependence, S. Chang, L. J. Brillson (Xerox Webster Research Center, Webster, NY 14580), D. F. Rioux (University of Wisconsin, Madison, WI), Y. J. Kime (Syracuse University, Syracuse, NY), P. D. Kirchner, G. D. Pettit, and J. M. Woodall (IBM, Yorktown Heights, NY), *Journal of Vacuum Science and Technology B* 8, No. 4, 1008–1013 (1990).

In-Plane Solvent Diffusion in a Soluble Polyimide Lift-off Structure, D.-Y. Shih, E. Galligan, J. Cataldo, J. Paraszczak, S. Nunes, R. Serino, W. Graham, and R. McGouey (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Journal of Vacuum Science and Technology B* 8, No. 5, 1038–1043 (1990).

Excimer Laser Planarization of Copper Deposited over Polyimide, R. J. Baseman (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598) and F. E. Turene (IBM, Hopewell Junction, NY), *Journal of Vacuum Science and Technology B* 8, No. 5, 1097–1101 (1990).

Excimer Laser Planarization of Patterned Metal Features, R. J. Baseman, J. C. Andreshak (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), R. H. Schnitzel (IBM, Hopewell Junction, NY), and J. E. Cronin (IBM, Essex Junction, VT), *Journal of Vacuum Science and Technology B* 8, No. 5, 1158–1160 (1990).

Experimental and Numerical Analysis of Read/Write Head Suspension Dynamics for High Performance Floppy Disk Systems, G. M. Frees and D. K. Miu (IBM Corporation, San Jose, CA 95114), *Journal of Vibration and Acoustics* 112, No. 1, 26–32 (1990).

L

Optical Waveguides from Novel Polymeric Langmuir–Blodgett Multilayer Assemblies, W. Hickel, G. Duda (Max-Planck-Institut für Polymerforschung, Ackermannweg 10, D-6500 Mainz, Federal Republic of Germany), M. Jurich (IBM, San Jose, CA), T. Krohl (Max-Planck-Institut für Polymerforschung, Mainz, Federal Republic of Germany), K. Rochford, G. I. Stegeman (University of Arizona, Tucson, AZ), J. D. Swalen (IBM, San Jose, CA), G. Wegner, and W. Knoll (Max-Planck-Institut für Polymerforschung, Mainz, Federal Republic of Germany), *Langmuir* 6, No. 8, 1403–1407 (1990).

Improved Surface Adhesion and Coverage of Perfluoropolyether Lubricants Following Far-UV Irradiation, D. D. Saperstein (IBM Corporation, 5600 Cottle Road, San Jose, CA 95193) and L. J. Lin (IBM, San Jose, CA), *Langmuir* 6, No. 9, 1522–1524 (1990).

Monge Sequences, Antimatroids, and the Transportation Problem with Forbidden Arcs, B. L. Dietrich (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Linear Algebra and Its Applications* **139**, 133–145 (1990).

Computer Simulation Studies of Anisotropic Systems. 19. Mesophases Formed by the Gay-Berne Model Mesogen, G. R. Luckhurst, R. A. Stephens (University of Southampton, Southampton SO9 5NH, Hants, England), and R. W. Phippen (IBM, Winchester, United Kingdom), *Liquid Crystals* **8**, No. 4, 451–464 (1990).

Orientational Ordering of Ferroelectric Thiobenzoate Liquid Crystals, W. Richter, D. Reimer, B. M. Fung (University of Oklahoma, Norman, OK 73019), R. J. Twieg, and K. Betterton (IBM, San Jose, CA), *Liquid Crystals* **8**, No. 5, 687–699 (1990).

Liquid Crystalline Behavior of a Series of Poly(Di-N-Alkylsilanes), P. Weber, D. Guillon, A. Skoulios (University of Louis Pasteur, CNRS, F-67083 Strasbourg, France), and R. D. Miller (IBM, San Jose, CA), *Liquid Crystals* **8**, No. 6, 825–837 (1990).

M

A New Mechanism of Toughening Glassy Polymers. 1. Experimental Procedures, O. S. Gebizlioglu, H. W. Beckham, A. S. Argon, R. E. Cohen (Massachusetts Institute of Technology, Cambridge, MA 02139), and H. R. Brown (IBM, San Jose, CA), *Macromolecules* **23**, No. 17, 3968–3974 (1990).

A New Mechanism of Toughening Glassy Polymers. 2. Theoretical Approach, A. S. Argon, R. E. Cohen, O. S. Gebizlioglu (Massachusetts Institute of Technology, Cambridge, MA 02139), H. R. Brown (IBM, San Jose, CA), and E. J. Kramer (Cornell University, Ithaca, NY), *Macromolecules* **23**, No. 17, 3975–3982 (1990).

Phase-Separation Kinetics of Mixtures of Linear and Star-Shaped Polymers, B. J. Factor, T. P. Russell, B. A. Smith (IBM Corporation, 650 Harry Road, San Jose, CA 95120), L. J. Fetters (Exxon Research Laboratory, Annandale, NJ), B. J. Bauer, and C. C. Han (National Institute of Standards and Technology, Gaithersburg, MD), *Macromolecules* **23**, No. 20, 4452–4455 (1990).

Segregation of Block Copolymers to Interfaces Between Immiscible Homopolymers, K. R. Shull, E. J. Kramer (Cornell University, Ithaca, NY 14853), G. Hadzioannou, and W. Tang (IBM, San Jose, CA), *Macromolecules* **23**, No. 22, 4780–4787 (1990).

Automatic Metallographic Preparation of Low-Concentration, Directionally Solidified Lead-Tin Alloys, M. A. Chopra (IBM Corporation, Austin, TX 78758) and R. W. Rauser (Sverdrup Technology, Inc., Cleveland, OH), *Materials Characterization* **25**, No. 3, 311–323 (1990).

High Temperature Crystal Structures of Orthorhombic and Rhombohedral PrNiO_3 , T. C. Huang, W. Parrish, H. Toraya, P. Lacorre, and J. B. Torrance (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Materials Research Bulletin* **25**, No. 9, 1091–1098 (1990).

Structural Study of Amorphous Tb-Fe-Co Films by X-Ray Diffraction, E. Matsubara, Y. Waseda (Tohoku University, Sendai, Miyagi 980, Japan), Y. Kato, and S. Takayama (IBM, Tokyo, Japan), *Materials Transaction JIM* **31**, No. 8, 739–742 (1990).

A Mathematical Model to Estimate Average Response Time of Parallel Programs, B. Qin (IBM Canada Ltd., 1150 Eglinton Avenue East, North York M3C 1H7, Ontario, Canada) and R. A. Ammar (University of Connecticut, Storrs, CT), *Mathematical and Computer Modeling* **13**, No. 8, 1–14 (1990).

On the Numerical Condition of Bernstein-Bézier Subdivision Processes, R. T. Farouki and C. A. Neff (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Mathematics of Computation* **55**, No. 192, 637–647 (1990).

Recall of Order Information by Deaf Signers: Phonetic Coding in Temporal Order Recall, V. L. Hanson (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Memory & Cognition* **18**, No. 6, 604–610 (1990).

An In Situ Scanning Electron Microscope Kossel X-Ray Diffraction Study of the Elastic Aftereffect in a Ferroelastic Alloy, B. Cunningham (IBM Corporation, Route 52, Hopewell Junction, NY 12533) and K. H. G. Ashbee (University of Knoxville, Knoxville, TN), *Metallurgical Transactions A* **21**, No. 9, 2599–2601 (1990).

Intelligent Interface Design: An Empirical Assessment of Knowledge Presentation in Expert Systems, D. M. Lamberti and W. A. Wallace (IBM Corporation, 101 Main Street, Cambridge, MA 02142), *MIS Quarterly* **14**, No. 3, 279–311 (1990).

Progress in Linear Optics, Nonlinear Optics and Surface Alignment of Liquid Crystals, H. L. Ong (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), R. B. Meyer (Brandeis University, Waltham, MA), A. J. Hurd (Sandia National Laboratory, Albuquerque, NM), A. J. Karn (University of California, Berkeley, CA), S. M. Arakelian (Temple University, Philadelphia, PA), Y. R. Shen (University of California, Berkeley, CA), P. N. Sanda, D. B. Dove (IBM, Yorktown Heights, NY), S. A. Jansen (Cornell University, Ithaca, NY), and R. Hoffman (IBM, Yorktown Heights, NY), *Molecular Crystals and Liquid Crystals* **179**, 365–375 (1990).

In Situ Radiation Induced Doping, M. Angelopoulos, J. M. Shaw (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), W. S. Huang, and R. D. Kaplan (IBM, Hopewell Junction, NY), *Molecular Crystals and Liquid Crystals* **189**, 221–225 (1990).

Metallization of Printed Circuit Boards Using Conducting Polyaniline, W. S. Huang (IBM Corporation, Route 52, Hopewell Junction, NY 12533), M. Angelopoulos (IBM, Yorktown Heights, NY), J. R. White, and J. M. Park (IBM, Endicott, NY), *Molecular Crystals and Liquid Crystals* **189**, 227–235 (1990).

Electrical and Electrochemical Properties of Some Polyarylene Vinylene Derivatives and Their Mixed Copolymers, W. S. Huang (IBM Corporation, Route 52, Hopewell Junction, NY 12533), K. Y. Jen (Eichem. Amer. Inc., Monmouth Junction, NJ), M. Angelopoulos (IBM, Yorktown Heights, NY), A. G. MacDiarmid (University of Pennsylvania, Philadelphia, PA), and M. P. Cava (University of Alabama, Tuscaloosa, AL), *Molecular Crystals and Liquid Crystals* **189**, 237–254 (1990).

N

Synthesis of the Defect Perovskite Series LaCuO_{3-x} with Copper Valence Varying from 2+ to 3+, J. F. Bringley, B. A. Scott, S. J. La Placa, R. F. Boehme, T. M. Shaw, M. W. McElfresh, S. S. Trail (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), and D. E. Cox (Brookhaven National Laboratory, Upton, NY), *Nature* **347**, No. 6290, 263-265 (1990).

The Potential Distribution Around Growing Fractal Clusters, B. B. Mandelbrot (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598) and C. J. G. Evertsz (Yale University, New Haven, CT), *Nature* **348**, No. 6297, 143-145 (1990).

A Wide Instruction Word Architecture for Parallel Execution of Logic Programs Coded in BSL, K. Ebcioglu and M. Kumar (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *New Generation Computing* **7**, Nos. 2,3, 219-242 (1990).

Fractals: A Geometry of Nature, B. Mandelbrot (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *New Scientist* **127**, No. 1734, 38-43 (1990).

O

Bias Properties of Budget Constrained Simulations, P. W. Glynn (Stanford University, Stanford, CA 94305) and P. Heidelberger (IBM, Yorktown Heights, NY), *Operations Research* **38**, No. 5, 801-814 (1990).

Recursive Computation of Steady-State Probabilities in Priority Queues, I. Cidon (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598) and M. Sidi (Technion, Israel Institute of Technology, Haifa, Israel), *Operations Research Letters* **9**, No. 4, 249-256 (1990).

P

A Parallel FFT on an MIMD Machine, A. Averbuch, E. Gebber, B. Gordissky (Tel-Aviv University, IL-69978 Tel Aviv, Israel), and Y. Medan (IBM, Haifa, Israel), *Parallel Computing* **15**, Nos. 1-3, 61-74 (1990).

Parallel Merging: Algorithm and Implementation Results, P. J. Varman (Rice University, Houston, TX 77251), B. R. Iyer, D. J. Haderle, and S. M. Dunn (IBM, San Jose, CA), *Parallel Computing* **15**, Nos. 1-3, 165-177 (1990).

Residual Irreversibility in High- T_c Superconductors, L. Krusin-Elbaum, A. P. Malozemoff, D. C. Cronmeyer, F. Holtzberg, G. V. Chandrasekhar (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), J. R. Clem, and Z. Hao (Iowa State University, Ames, IA), *Physica A* **168**, No. 1, 367-377 (1990).

A 24-Squid Gradiometer for Magnetoencephalography, S. Ahlfors, A. Ahonen (Helsinki University, 012150 Espoo, Finland), G. Ehnholm (Instrumentarium Imaging Ltd., Helsinki, Finland), M. Hämäläinen, R. Ilmoniemi, M. Kajola, M. Kiviranta, J. Knuutila, O. Lounasmaa, J. Simola (Helsinki University, Espoo, Finland), C. Tesche (IBM, Yorktown Heights, NY), and V. Vilkmann (Helsinki University, Espoo, Finland), *Physica B* **165&166**, 97-98 (1990).

Superconducting Measurement Circuit for an EPR Experiment with an rf SQUID, C. D. Tesche (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Physica B* **165&166**, 925-926 (1990).

Non-Logarithmic Magnetic Relaxation in PbMo_6S_8 , P. Norling, K. P. Niskanen, P. Nordblad, P. Svedling, L. Lundgren (University of Uppsala, Box 534, S-75121 Uppsala, Sweden), C. Rossel (IBM, Rüschlikon, Switzerland), M. Sergent, R. Chevrel, and M. Potel (Université de Rennes, Cedex, France), *Physica B* **165&166**, 1131-1132 (1990).

Nernst Effect in High- T_c Superconducting Films, F. Kober, R. P. Huebener, H.-C. Ri, T. Sermet, A. V. Ustinov, M. Zeh (University of Tübingen, D-7400 Tübingen 1, Federal Republic of Germany), J. Mannhart (IBM, Rüschlikon, Switzerland), R. Gross, and A. Gupta (IBM, Yorktown Heights, NY), *Physica B* **165&166**, 1217-1218 (1990).

Specific Heat of $\text{La}_{1-x}\text{Sr}_x\text{CuO}_4$ Volume Fraction of Superconductivity; Possible Structural Transition at 45K, A. Amato, R. A. Fisher, N. E. Phillips (University of California, Berkeley, CA 94720), and J. B. Torrance (IBM, San Jose, CA), *Physica B* **165&166**, 1337-1338 (1990).

Rare Earth (RE) Dependence and Ce-Concentration Dependence of T_c in Bi-2222 Phase $\text{Bi}_2\text{Sr}_2(\text{RE}_{1-x}\text{Ce}_x)_2\text{Cu}_{21}\text{O}_{10+y}$, T. Arima, Y. Tokura, H. Takagi, S. Uchida (University of Tokyo, Bunkyo Ku, Tokyo 113, Japan), R. Beyers, and J. B. Torrance (IBM, San Jose, CA), *Physica B* **165&166**, 1551-1552 (1990).

Raman Active Phonons in Tl-Based High- T_c Superconductors, G. Burns (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), M. K. Crawford (E. I. du Pont de Nemours & Company, Inc., Wilmington, DE), F. H. Dacol (IBM, Yorktown Heights, NY), and N. Herron (E. I. du Pont de Nemours & Company, Inc., Wilmington, DE), *Physica C* **170**, No. 1&2, 80-86 (1990).

Modulated Microwave Absorption of $\text{Nd}_{2-x}\text{Co}_x\text{CuO}_4$ Single Crystals, K. W. Blazey and I. Mangelshöts (IBM Corporation, Säumerstrasse 4, 8803 Rüschlikon, Switzerland), *Physica C* **170**, Nos. 3&4, 267-270 (1990).

Noise Characteristics of Single Grain Boundary Junction DC SQUIDs in $\text{Y}_1\text{Ba}_2\text{Cu}_3\text{O}_{7-x}$ Films, R. Gross, P. Chaudhari, M. Kawasaki, M. Ketchen, and A. Gupta (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Physica C* **170**, Nos. 3&4, 315-318 (1990).

Electrical and Structure Properties of Epitaxially Grown $\text{Y}_1\text{Ba}_2\text{Cu}_3\text{O}_{7-x}$ and $\text{Y}_2\text{Ba}_4\text{Cu}_8\text{O}_{16-x}$ Thin Films Using the BaF_2 Method, M. Moske (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10594), S. Dina, G. V. Minnigerode (Universität Göttingen, Göttingen, Federal Republic of Germany), and K. Samwer (Universität Augsburg, Augsburg, Federal Republic of Germany), *Physica C* **170**, Nos. 5&6, 491-499 (1990).

Matter-Wave Interferometry for Back-Action-Evading Measurement of Optical Energy Density, M. D. Levenson (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Physical Review A* **42**, No. 5, 2935-2943 (1990).

Phase-Noise Scaling in Quantum Soliton Propagation, R. M. Shelby (IBM Corporation, 650 Harry Road, San Jose, CA 95120), P. D. Drummond, and S. J. Carter (University of Queensland, St. Lucia, Australia), *Physical Review A* **42**, No. 5, 2966–2976 (1990).

Nonideal Quantum Nondemolition Measurements, M. J. Holland, M. J. Collett, D. F. Walls (University of Auckland, Auckland, New Zealand), and M. D. Levenson (IBM, San Jose, CA), *Physical Review A* **42**, No. 5, 2995–3005 (1990).

Generic Nonergodic Behavior in Locally Interacting Continuous Systems, Y. He (University of Illinois, Champaign, IL 61820), C. Jayaprakash (Ohio State University, Columbus, OH), and G. Grinstein (IBM, Yorktown Heights, NY), *Physical Review A* **42**, No. 6, 3348–3355 (1990).

Constant Molecular Rotation at the Smectic-A to Smectic-C Star Transition in Ferroelectric Liquid Crystals, F. Kremer, S. U. Vallerien (Max-Planck-Institut für Polymerforschung, Mainz, Federal Republic of Germany), H. Kapitza, R. Zentel (IBM, San Jose, CA), and E. W. Fischer (Max-Planck-Institut für Polymerforschung, Mainz, Federal Republic of Germany), *Physical Review A* **42**, No. 6, 3667–3669 (1990).

Exactly Self-Similar Left-Sided Multifractal Measures, B. B. Mandelbrot (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), C. J. G. Evertsz, and Y. Hayakawa (Yale University, New Haven, CT), *Physical Review A* **42**, No. 8, 4528–4536 (1990).

Electronic Properties of Nascent GaP(110)–Noble-Metal Interfaces, R. Ludke, A. B. McLean, and A. Taleb-Ibrahimi (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Physical Review B* **42**, No. 5, 2982–2995 (1990).

Sprain-Induced Quantum Confinement of Carriers Due to Extended Defects in Silicon, H. Weman (University of California, Santa Barbara, CA 93106), B. Monemar (Max-Planck-Institut für Festkörperforschung, Stuttgart, Federal Republic of Germany), G. S. Oehrlein, and S. J. Jeng (IBM, Yorktown Heights, NY), *Physical Review B* **42**, No. 5, 3109–3112 (1990).

Magnetoresistance of Very Pure Simple Metals, M. Büttiker (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Physical Review B* **42**, No. 5, 3197–3200 (1990).

Possible Observation of Impurity Effects on Conductance Quantization, J. Faist, P. Guéret, and H. Rotnuizen (IBM Corporation, Säumerstrasse 4, 8803 Rüschlikon, Switzerland), *Physical Review B* **42**, No. 5, 3217–3219 (1990).

Conductance Oscillations Periodic in the Density of One-Dimensional Electron Gases, S. B. Field, M. A. Kastner, U. Meirav, J. H. Scott-Thomas (University of Michigan, Ann Arbor, MI 48109), D. A. Antoniadis, H. I. Smith (Massachusetts Institute of Technology, Cambridge, MA), and S. J. Wind (IBM, Yorktown Heights, NY), *Physical Review B* **42**, No. 6, 3523–3536 (1990).

Successive Oxidation Stages of Adatoms on the Si(111) 7×7 Surface Observed with Scanning Tunneling Microscopy and Spectroscopy, J. P. Pelz and R. H. Koch (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Physical Review B* **42**, No. 6, 3761–3764 (1990).

Spiral Phases and Time-Reversal-Violating Resonating-Valence-Bond States of Doped Antiferromagnets, B. Chakraborty (Brandeis University, Waltham, MA 02254), N. Read (Yale University, New Haven, CT), C. Kane (IBM, Yorktown Heights, NY), and P. A. Lee (Massachusetts Institute of Technology, Cambridge, MA), *Physical Review B* **42**, No. 7, 4819–4822 (1990).

On the Performance of Atomic Natural Orbital Basis Sets: A Full Configuration Interaction Study, F. Illas, J. M. Ricart, J. Rubio (University of Barcelona, E-43005, Tarragona, Spain), and P. S. Bagus (IBM, San Jose, CA), *Physical Review B* **42**, No. 7, 4982–4985 (1990).

Electron States in a GaAs Quantum Dot in a Magnetic Field, A. Kumar, S. E. Laux, and F. Stern (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Physical Review B* **42**, No. 8, 5166–5175 (1990).

Accurate Interband-Auger-Recombination Rates in Silicon, D. B. Laks, G. F. Neumark (Columbia University, New York, NY 10027), and S. T. Pantelides (IBM, Yorktown Heights, NY), *Physical Review B* **42**, No. 8, 5176–5185 (1990).

Low-Energy-Electron Escape Lengths in SiO_2 , F. R. McFeely, E. Cartier (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), J. A. Yarmoff (University of California, Riverside, CA), and S. A. Joyce (National Institute of Standards and Technology, Gaithersburg, MD), *Physical Review B* **42**, No. 8, 5191–5200 (1990).

Current Transport in High-Barrier IrSi/Si Schottky Diodes, M. Wittmer (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Physical Review B* **42**, No. 8, 5249–5259 (1990).

Polarization Properties of Quasielastic Light Scattering in Fused-Silica Optical Fiber, S. H. Perlmuter, M. D. Levenson, R. M. Shelby (IBM Corporation, 650 Harry Road, San Jose, CA 95120), and M. B. Weissman (University of Illinois, Urbana, IL), *Physical Review B* **42**, No. 8, 5294–5305 (1990).

Formation of the 5×5 Reconstruction on Cleaved Si(111) Surfaces Studied by Scanning Tunneling Microscopy, R. M. Feenstra and M. A. Lutz (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Physical Review B* **42**, No. 8, 5391–5394 (1990).

Numerical Study of Long Josephson Junctions Coupled to a High- Q Cavity, N. Grønbech-Jensen, N. F. Pedersen (Technical University of Denmark, DK-2800 Lyngby, Denmark), A. Davidson (IBM, Yorktown Heights, NY), and R. D. Parmentier (University of Salerno, Baronissi, Italy), *Physical Review B* **42**, No. 10, 6035–6039 (1990).

Effect of a Geometrical Length Scale on Remanent Magnetization and Critical Currents in Y-Ba-Cu-O and Bi-Sr-Ca-Cu-O Crystals, Y. Yeshurun, M. W. McElfresh, A. P. Malozemoff, J. Hagerhorst-Trehwella, J. Mannhart, F. Holtzberg, and G. V. Chandrashekhar (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Physical Review B* **42**, No. 10, 6322–6331 (1990).

Flux-Flow Nernst Effect in Epitaxial $\text{YBa}_2\text{Cu}_3\text{O}_7$, S. J. Hagen, C. J. Lobb (University of Maryland, College Park, MD 20742), R. L. Greene (IBM, Yorktown Heights, NY), M. G. Forrester, and J. Talvacchio (Westinghouse Science and Technology Center, Pittsburgh, PA), *Physical Review B* **42**, No. 10, 6777–6780 (1990).

Universality in the Current Decay and Flux Creep of Y-Ba-Cu-O High-Temperature Superconductors, A. P. Malozemoff (Université Paris-Sud, Batiment 510, 91405 Orsay, France) and M. P. A. Fisher (IBM, Yorktown Heights, NY), *Physical Review B* **42**, No. 10, 6784–6786 (1990).

Effect of Spin-Orbit and Spin-Flip Scattering on Conductance Fluctuations, V. Chandrasekhar, P. Santhanam (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), and D. E. Prober (Yale University, New Haven, CT), *Physical Review B* **42**, No. 10, 6823–6826 (1990).

Short-Time Relaxation at Polymeric Interfaces, A. Karim, A. Mansour, G. P. Felcher (Argonne National Laboratories, Argonne, IL 60439), and T. P. Russell (IBM, San Jose, CA), *Physical Review B* **42**, No. 10, 6846–6849 (1990).

Evidence for Trimer Reconstruction of $\text{Si}(111) \sqrt{3} \times \sqrt{3}$ -Sb: Scanning Tunneling Microscopy and First-Principles Theory, P. Mårtensson (Linköping University, S-58183 Linköping, Sweden), G. Meyer, N. M. Amer, E. Kaxiras, and K. C. Pandey (IBM, Yorktown Heights, NY), *Physical Review B* **42**, No. 11, 7230–7233 (1990).

Ab Initio Calculation of Properties of Carbon in the Amorphous and Liquid States, G. Galli, R. M. Martin (University of Illinois, Urbana, IL 61801), R. Car (International School for Advanced Studies, Trieste, Italy), and M. Parrinello (IBM, Rüschlikon, Switzerland), *Physical Review B* **42**, No. 12, 7470–7482 (1990).

Site-Dependent Electronic Effects, Forces, and Deformations in Scanning Tunneling Microscopy of Flat Metal Surfaces, C. Ciraci, A. Baratoff, and I. P. Batra (IBM Corporation, Säumerstrasse 4, 8803 Rüschlikon, Switzerland), *Physical Review B* **42**, No. 12, 7618–7621 (1990).

Muon-Spin-Rotation Measurements of the London Penetration Depths in $\text{YBa}_2\text{Cu}_3\text{O}_{6.97}$, B. Pümpin, H. Keller, W. Kündig, W. Odermatt, I. M. Šavić, J. W. Schneider, H. Simmler, P. Zimmermann (Universität Zürich, CH-8991 Zürich, Switzerland), E. Kaldis, S. Rusiecki (Eidgenössische Technische Hochschule Zürich, Zürich, Switzerland), Y. Maeno, and C. Rossel (IBM, Rüschlikon, Switzerland), *Physical Review B* **42**, No. 13, 8019–8029 (1990).

High-Resolution Electron-Energy-Loss Study of the Surfaces and Energy Gaps of Cleaved High-Temperature Superconductors, B. N. J. Persson (IBM Corporation, Säumerstrasse 4, 8803 Rüschlikon, Switzerland) and J. E. Demuth (IBM, Yorktown Heights, NY), *Physical Review B* **42**, No. 13, 8057–8072 (1990).

Photoemission Study of CuO and Cu_2O Single Crystals, Z. X. Shen, R. S. List (Los Alamos National Laboratory, Los Alamos, NM), D. S. Dessau (Stanford University, Stanford, CA), F. Parmigiani (IBM, San Jose, CA), A. J. Arko, R. Bartlett (Los Alamos National Laboratory, Los Alamos, NM), B. D. Wells, I. Lindau, and W. E. Spicer (Stanford University, Stanford, CA), *Physical Review B* **42**, No. 13, 8081–8085 (1990).

Antiferromagnetism in 3d Transition Metals, V. L. Moruzzi and P. M. Marcus (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Physical Review B* **42**, No. 13, 8361–8366 (1990).

Constrained Spin Model of Phason Dynamics in Quasicrystals, L. D. Gronlund (University of Maryland, College Park, MD 20740), D. C. Wright, J. P. Sethna (Cornell University, Ithaca, NY), and D. S. Rokhsar (IBM, Yorktown Heights, NY), *Physical Review B* **42**, No. 13, 8517–8536 (1990).

Critical Currents of Superconducting Metal-Oxide-Semiconductor Field-Effect Transistors, A. W. Kleinsasser and T. N. Jackson (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Physical Review B* **42**, No. 13, 8716–8719 (1990).

Tunneling Matrix Elements in Three-Dimensional Space: The Derivative Rule and the Sum Rule, C. J. Chen (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Physical Review B* **42**, No. 14, 8841–8857 (1990).

Transmission Through Multiply-Connected Wire Systems, D. Kowal (Tel-Aviv University, IL-69978 Tel Aviv, Israel), U. Sivan (IBM, Yorktown Heights, NY), O. Entin-Wohlman (Tel-Aviv University, Tel Aviv, Israel), and T. Imry (The Weizmann Institute of Science, Rehovot, Israel), *Physical Review B* **42**, No. 14, 9009–9018 (1990).

Gapless Peierls Transition, I. P. Batra (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Physical Review B* **42**, No. 14, 9162–9018 (1990).

Quantitative Low-Energy Electron-Diffraction Study of the Epitaxy of Fe on Ag {001}: Questions About the Growth Mode, H. Li, Y. S. Li, J. Quinn, D. Tian (State University of New York, Stony Brook, NY 11794), J. Sokolov (City University of New York, Flushing, NY), F. Jona (State University of New York, Stony Brook, NY), and P. M. Marcus (IBM, Yorktown Heights, NY), *Physical Review B* **42**, No. 14, 9195–9198 (1990).

Theoretical Study of Collimated Field Emission of Electrons from a Point Source, E. Tekman, S. Ciraci (Bilkent University, Ankara, Turkey), and A. Baratoff (IBM, Rüschlikon, Switzerland), *Physical Review B* **42**, No. 14, 9221–9224 (1990).

Electric-Field Effects on Exciton Lifetimes in Symmetrical Coupled $\text{GaAs}/\text{Al}_{0.3}\text{Ga}_{0.7}\text{As}$ Double Quantum Wells, A. Alexandrou, J. A. Kash, E. E. Mendez, M. Zachau, J. M. Hong (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), T. Fukuzawa, and Y. Hase (IBM, Tokyo, Japan), *Physical Review B* **42**, No. 14, 9225–9228 (1990).

Comparison of Relativistic and Nonrelativistic Approaches to the Collective Model Treatment of $p + {}^{40}\text{Ca}$ Inelastic Scattering, S. Shim, B. C. Clark, E. D. Cooper, S. Hama (Ohio State University, Columbus, OH 43210), R. L. Mercer (IBM, Yorktown Heights, NY), L. Ray (University of Texas, Austin, TX), J. Raynal (Centre d'Études Nucléaires, Gif-sur-Yvette, France), and H. S. Sherif (University of Alberta, Edmonton, Alberta, Canada), *Physical Review C* **42**, No. 4, 1592–1597 (1990).

Cascade Statistical Model for Nucleon-Induced Reactions on Light Nuclei in the Energy Range 50 MeV–1 GeV, H. H. K. Tang, G. R. Srinivasan, and N. Azziz (IBM Corporation, Route 52, Hopewell Junction, NY 12533), *Physical Review C* **42**, No. 4, 1598–1622 (1990).

Crossovers in the Density of States of Fractal Silica Aerogels, R. Vacher (Université de Montpellier II, F-34095 Montpellier, France), E. Courtens (IBM, Rüschlikon, Switzerland), G. Coddens (Centre d'Etudes Nucléaires de Saclay, Gif-sur-Yvette, France), A. Heidemann (Institut Laue-Langevin, Grenoble, France), Y. Tsujimi (IBM, Rüschlikon, Switzerland), J. Pelous, and M. Foret (Université de Montpellier II, Montpellier, France) *Physical Review Letters* **65**, No. 8, 1008–1011 (1990).

Experimental Study of Critical Mass Fluctuations in an Evolving Sandpile, G. A. Held, D. H. Solina II, D. T. Keane, W. J. Haag, P. M. Horn, and G. Grinstein (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Physical Review Letters* **65**, No. 9, 1120–1123 (1990).

Tip-Dependent Corrugation of Graphite in Scanning Tunneling Microscopy, J. Tersoff and N. D. Lang (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Physical Review Letters* **65**, No. 9, 1132–1135 (1990).

Defect Independence of the Irreversibility Line in Proton-Irradiated Y-Ba-Cu-O Crystals, L. Civale, A. D. Marwick, M. W. McElfresh, T. K. Worthington, A. P. Malozemoff, F. H. Holtzberg (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), J. R. Thompson (Oak Ridge National Laboratory, Oak Ridge, TN), and M. A. Kirk (Argonne National Laboratory, Argonne, IL), *Physical Review Letters* **65**, No. 9, 1164–1167 (1990).

Symmetry Breaking in Mott Insulators, D. H. Lee (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598) and R. Shankar (Yale University, New Haven, CT), *Physical Review Letters* **65**, No. 12, 1490–1493 (1990).

Exactly Soluble Model of Fractional Statistics, S. M. Girvin, A. H. MacDonald (Indiana University, Bloomington, IN 47405), M. P. A. Fisher (IBM, Yorktown Heights, NY), S. J. Rey (University of California, Santa Barbara, CA), and J. P. Sethna (Cornell University, Ithaca, NY), *Physical Review Letters* **65**, No. 13, 1671–1674 (1990).

Soft X-Ray-Induced Core-Level Photoemission as a Probe of Hot-Electron Dynamics in SiO₂, F. R. McFeely, E. Cartier, L. J. Terminello, A. Santoni, and M. V. Fischetti (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Physical Review Letters* **65**, No. 15, 1937–1940 (1990).

Equilibrium Structures of Si(100) Stepped Surfaces, T. W. Poon, S. Yip (Massachusetts Institute of Technology, Cambridge MA 02139), P. S. Ho (IBM, Yorktown Heights, NY), and F. F. Abraham (IBM, San Jose, CA), *Physical Review Letters* **65**, No. 17, 2161–2164 (1990).

Long Mean Free Path of Hot Electrons Selectively Injected to Higher Subbands, B. Laikhtman, U. Sivan, A. Yacoby, C. P. Umbach, M. Heiblum, J. A. Kash, and H. Shtrikman (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Physical Review Letters* **65**, No. 17, 2181–2184 (1990).

Interaction Forces of a Sharp Tungsten Tip with Molecular Films on Silicon Surfaces, G. S. Blackman, C. M. Mate, and M. R. Philpott (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Physical Review Letters* **65**, No. 18, 2270–2273 (1990).

Time-Resolved Absorption Spectra of Dissociating Molecules, R. E. Walkup, J. A. Misewich, J. H. Glowina, and P. P. Sorokin (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Physical Review Letters* **65**, No. 19, 2366–2369 (1990).

Atomic Emission from a Gold Scanning-Tunneling-Microscope Tip, H. J. Mamin, P. H. Guethner, and D. Rugar (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Physical Review Letters* **65**, No. 19, 2418–2421 (1990).

Bonding, Structure, and Magnetism of Physisorbed and Chemisorbed O₂ on Pt(111), W. Wurth (Technische Universität München, D-8046 Garching, Federal Republic of Germany), J. Stöhr (IBM, San Jose, CA), P. Feulner (Technische Universität München, Garching, Federal Republic of Germany), X. Pan, K. R. Bauchspiess, Y. Baba (IBM, San Jose, CA), E. Hudel, G. Rocker, and D. Menzel (Technische Universität München, Garching, Federal Republic of Germany), *Physical Review Letters* **65**, No. 19, 2426–2429 (1990).

Transient Two-Ion Chaos, R. G. Brewer, J. Hoffnagle, and R. G. DeVoe (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Physical Review Letters* **65**, No. 21, 2619–2622 (1990).

Anomalous Isotope Effect and van Hove Singularity in Superconducting Cu Oxides, C. C. Tsuei, D. M. Newns, C. C. Chi, and P. C. Patnaik (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Physical Review Letters* **65**, No. 21, 2724–2727 (1990).

Quantum Rotors, Phase-Slip Centers, and the Coulomb Blockade, A. Davidson and P. Santhanam (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Physics Letters A* **149**, No. 9, 476–480 (1990).

Atomic Force Microscopy, D. Rugar (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Physics Today* **43**, No. 10, 23–30 (1990).

Imide-Aryl Ether Benzothiazole Copolymers, J. L. Hedrick (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Polymer Bulletin* **24**, No. 4, 371–377 (1990).

Dissolution of Ekonol in Trifluoromethanesulfonic Acid, R. D. Johnson, N. Neissner, A. Muehlebach, J. Economy, and J. Lylerla (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Polymer Communications* **31**, No. 10, 383–385 (1990).

Modification of Polytetrafluoroethylene and Polyethylene Surfaces Downstream from Helium Microwave Plasmas, F. D. Egitto and L. J. Matienzo (IBM Corporation, 1701 North Street, Endicott, NY 12533), *Polymer Degradation and Stability* **30**, No. 3, 293–308 (1990).

On the Convergence Properties of the Hopfield, J. Bruck (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Proceedings of the IEEE* **78**, No. 10, 1579–1585 (1990).

Maximum A Posteriori Decision and Evaluation of Class Probabilities by Boltzmann Perceptron Classifiers, E. Yair (IBM Israel, IL-32000 Haifa, Israel) and A. Gersho (University of California, Berkeley, CA), *Proceedings of the IEEE* **78**, No. 10, 1620–1628 (1990).

Neural Computation of Arithmetic Functions, K.-Y. Siu (Stanford University, Stanford, CA 94305) and J. Bruck (IBM, San Jose, CA), *Proceedings of the IEEE* **78**, No. 10, 1669–1675 (1990).

Cortical Functional Architecture and Local Coupling Between Neuronal Activity and the Microcirculation Revealed by In Vivo High-Resolution Optical Imaging of Intrinsic Signals, R. D. Frostig, E. E. Lieke, D. Y. Tso (Rockefeller University, 1230 York Avenue, New York, NY 10021), and A. Grinvald (IBM, Yorktown Heights, NY), *Proceedings of the National Academy of Sciences of the United States* **87**, No. 16, 6082–6086 (1990).

R

Synchronous Atomic Broadcast for Redundant Broadcast Channels, F. Cristian (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Real-Time Systems* **2**, No. 3, 195–212 (1990).

This Custom System Analyzes Coatings Three Ways, W. Traber (IBM Corporation, 5600 Cottle Road, San Jose, CA 95193) and C. Bryson (Surface/Interface Inc., Mountain View, CA), *Research & Development* **32**, No. 11, 117–120 (1990).

Force Microscopy with a Bidirectional Capacitance Sensor, G. Neubauer, S. R. Cohen, G. M. McClellan, and D. Horne (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Review of Scientific Instruments* **61**, No. 9, 2296–2308 (1990).

Angle-Resolved Inverse Photoemission Spectroscopy with Longitudinally Spin-Polarized Electrons, W. Grentz, M. Tschudy, B. Reihl (IBM Corporation, Säumerstrasse 4, 8803 Rüschlikon, Switzerland), and G. Kaindl (Freie Universität Berlin, Berlin, Federal Republic of Germany), *Review of Scientific Instruments* **61**, No. 10, 2528–2533 (1990).

S

Optical Studies of Strained III-V-Heterolayers, J. Y. Marzin (Centre National d'Études Télécommunication, 196 Avenue H. Ravera, F-92220 Bagneux, France), P. Voisin (École Normale Supérieure, Paris, France), J. A. Brum, and J. M. Gerard (IBM, Yorktown Heights, NY), *Semiconductors and Semimetals* **32**, 55–118 (1990).

The Hough Transform has $O(N)$ Complexity on $N \times N$ Mesh Connected Computers, R. E. Cypher (University of Washington, Seattle, WA 98195), J. L. C. Sanz (IBM, San Jose, CA), and L. Snyder (University of Washington, Seattle, WA), *SIAM Journal of Computing* **19**, No. 5, 805–820 (1990).

A Semiring on Convex Polygons and Zero-Sum Cycle Programs, K. Iwano (IBM Japan, Tokyo 102, Japan) and K. Steiglitz (Princeton University, Princeton, NJ), *SIAM Journal of Computing* **19**, No. 5, 883–901 (1990).

A Dirichlet Problem Exhibiting Global Bifurcation with Symmetry Breaking, C. Pospiech (IBM Germany, Tiergartenstrasse 15, D-6900 Heidelberg, Federal Republic of Germany), *SIAM Journal on Mathematical Analysis* **21**, No. 6, 1426–1452 (1990).

Fast Hybrid Solution of Algebraic Systems, C. C. Douglas (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), J. Mandel (University of Colorado, Denver, CO), and W. L. Miranker (IBM, Yorktown Heights, NY), *SIAM Journal on Scientific and Statistical Computing* **11**, No. 6, 1073–1086 (1990).

Hole Magnetotunneling in p-Type AlGa_{1-x}As, T. W. Hickmott (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Solid State Communications* **76**, No. 3, 315–319 (1990).

An Analytical Formulation of the Peripheral Base Resistance with Application to Statistical Process Variations, T. B. Hook (IBM Corporation, P.O. Box A, Essex Junction, VT 05452), *Solid State Electronics* **33**, No. 10, 1319–1326 (1990).

Magnetically Enhanced Reactive Ion Etching on Poly Gate Electrodes Smaller Than 0.5 μm , S. V. Nguyen, G. Chrisman, D. Dobuzinsky, and D. Harmon (IBM Corporation, P.O. Box A, Essex Junction, VT 05452), *Solid State Technology* **33**, No. 10, 73–77 (1990).

Computer Experiments in Molecular Evolution, C. A. Pickover (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Speculations in Science and Technology* **13**, No. 3, 181–190 (1990).

Flood Prediction: A Study in Fortran Optimization and Connectivity, B. Ralston (IBM United Kingdom, 414 Chiswick High Road, London W4 5TF, England), F. Thomas (IBM France, Paris, France), and F. Yeung (SERC, Didcot, England), *Supercomputer* **7**, No. 4, 48–51 (1990).

The Electronic Properties of the Miniband and the Effect of External Electric Fields in Superlattices, C. Y. Fong, R. F. Gallup (University of California, Davis, CA 95616), L. Esaki, and L. L. Chang (IBM, Yorktown Heights, NY), *Superlattices and Microstructures* **7**, No. 2, 147–151 (1990).

Diffuse and Abrupt Interface Formation Studied by High Resolution Electron Energy Loss Spectroscopy, P. A. Thiry, R. Sporken, J. Ghijsen, R. Caudano (Facultés Universitaires Notre-Dame de la Paix, Rue Bruxelles 61, B-5000 Namur, Belgium), and M. Liehr (IBM, Yorktown Heights, NY), *Superlattices and Microstructures* **7**, No. 3, 253–258 (1990).

Observation of Impurity Effects on Conductance Quantization, J. Faist, P. Guéret, and H. Rothuizen (IBM Corporation, Säumerstrasse 4, 8803 Rüschlikon, Switzerland), *Superlattices and Microstructures* **7**, No. 4, 349–351 (1990).

Surface Investigation of Copper in the Printed Circuit Board, A. Manara (Joint Research Centre, 21020 Ispra, Italy) and V. Sirtori (IBM Italia SpA, Vimercate, Italy), *Surface and Interface Analysis* **15**, No. 8, 457-462 (1990).

A Critical Interpretation of the Near-Edge X-Ray Absorption Fine Structure of Chemisorbed Benzene, A. C. Liu (Harvard University, Cambridge, MA 02138), J. Stöhr (IBM, San Jose, CA), C. M. Friend (Harvard University, Cambridge, MA), and R. J. Madix (Stanford University, Stanford, CA), *Surface Science* **235**, No. 2-3, 107-115 (1990).

Theoretical Analysis of the Vibrational Shifts of CO Chemisorbed on Pd(100), P. S. Bagus and G. Pacchioni (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Surface Science* **236**, No. 3, 233-240 (1990).

The Orientation of Phenoxide on Oxygen-Precovered Mo(110), A. C. Liu, C. M. Friend (Harvard University, Cambridge, MA 02138), and J. Stöhr (IBM, San Jose, CA), *Surface Science* **236**, No. 1/2, L349-L352 (1990).

Inverse Photoemission from Semiconductors, F. J. Himpsel (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Surface Science Reports* **12**, No. 1, 1-48 (1990).

T

Density Matrix Averaged Atomic Natural Orbital (ANO) Basis Sets for Correlated Molecular Wave Function I. First Row Atoms, P. O. Widmark (IBM Sweden, P.O. Box 4104, S-20312 Malmö, Sweden), P. A. Malmquist, and B. D. Roos (Chemical Center of Lund, Lund, Sweden), *Theoretical Computer Science* **77**, No. 5, 291-306 (1990).

Characterization of a Polyimide Siloxane by Thermal Analysis, L. T. Shi (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Thermochimica Acta* **166**, 127-136 (1990).

Dynamic Mechanical and Thermogravimetric Analyses of the Effect of Ferric Oxide on the Thermaloxidative Degradation of Silicone Rubber, W. H. Dickstein, R. L. Siemens, and E. Hadzioannou (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Thermochimica Acta* **166**, 137-145 (1990).

Crystallization Kinetics of Amorphous NiSi₂ Films, R. D. Thompson, J. Angilello, and K. N. Tu (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Thin Solid Films* **188**, No. 2, 259-265 (1990).

R.F. Diode Sputtering, J. S. Logan (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Thin Solid Films* **188**, No. 2, 307-321 (1990).

The Formation of Cu₃Si: Marker Experiments, L. Stolt and F. M. d'Heurle (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), *Thin Solid Films* **189**, No. 2, 269-274 (1990).

Characterization of Epitaxial (111) MgO Thin Films, C. R. Henry and H. Poppa (IBM Corporation, 650 Harry Road, San Jose, CA 95120), *Thin Solid Films* **189**, No. 2, 303-312 (1990).

U

ELNES of 3d Transition-Metal Oxides I. Variations Across the Periodic Table, O. L. Krivanek (Gatan Research and Development, 6678 Owens Drive, Pleasanton, CA 94566) and J. H. Paterson (IBM, San Jose, CA), *Ultramicroscopy* **32**, No. 4, 313-318 (1990).

ELNES of 3d Transition-Metal Oxides II. Variations with Oxidation State and Crystal Structure, J. H. Paterson (IBM Corporation, 650 Harry Road, San Jose, CA 95120) and O. L. Krivanek (Gatan Research and Development, Pleasanton, CA), *Ultramicroscopy* **32**, No. 4, 319-325 (1990).

Observation of the Graphite Surface by Reflection Electron Microscopy During STM Operation, J. C. H. Spence, W. Lo (Arizona State University, Tempe, AZ 85287), and M. Kuwabara (IBM, Yorktown Heights, NY), *Ultramicroscopy* **33**, No. 2, 69-82 (1990).

The Spectrum of Tetrahedral Quadruple Systems, A. Hartman and K. T. Phelps (IBM Israel, Haifa, Israel), *Utilities Mathematica* **37**, 181-188 (1990).

V

Microvoids and Defect Chemistry at the Si/SiO₂ Interface Studied by Positron Annihilation Depth Profiling, G. W. Rubloff (IBM Corporation, P.O. Box 218, Yorktown Heights, NY 10598), B. Nielsen, K. G. Lynn, D. O. Welch, and T. C. Leung (Brookhaven National Laboratory, Upton, NY), *Vacuum* **41**, No. 4-6, 790-792 (1990).

W

Coolant Contamination of Sintered Bronze Parts, R. G. Bayer, P. A. Lazarou, N. G. Payne, and D. J. Gould (IBM Corporation, 1701 North Street, Endicott, NY 12533), *Wear* **140**, No. 1, 165-173 (1990).

Fatigue Life Prediction for Low Tin Lead Based Solder at Low Strains, S. Vaynman (Northwestern University, Evanston, IL 60201) and A. Zubelewicz (IBM, Austin, TX), *Welding Journal* **69**, No. 10, S395-S398 (1990).

Z

Connectivity and the Fraction Dimension of Percolation Clusters, E. Stoll and E. Courtens (IBM Corporation, Säumerstrasse 4, 8803 Rüschlikon, Switzerland), *Zeitschrift für Physik B* **81**, No. 1, 1-2 (1990).

Correlation between the Hall Coefficient, Penetration Depth, Transition Temperature, Gap Anisotropy and Hole Concentration in Layered High-Temperature Superconductors, T. Schneider and M. P. Sørensen (IBM Corporation, Säumerstrasse 4, 8803 Rüschlikon, Switzerland), *Zeitschrift für Physik B* **81**, No. 1, 3-12 (1990).